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DESIGNED BY MISS KIDWELL

ON STONE BY P. J. LANE, A.R.A.

Dr. Amos Bronfield

FLORA VECTENSIS:

BEING

A SYSTEMATIC DESCRIPTION

OF THE

Phænogamous or Flowering Plants and Ferns

INDIGENOUS TO THE

ISLE OF WIGHT.

BY THE LATE

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TO

His Royal Highness Prince Albert,

OF SAXE-COBURG AND GOTHA,

K.G.,

HONORARY MEMBER OF THE LINNEAN SOCIETY OF LONDON,

ETC., ETC., ETC.,

THIS POSTHUMOUS WORK OF THE LATE DR. BROMFIELD,

DESCRIBING THE PLANTS OF A BRITISH ISLAND, CELEBRATED FOR ITS
BEAUTY AND SCENERY, AND HONOURED BY THE SPECIAL

RESIDENCE OF HIS ROYAL HIGHNESS,

IS,

WITH HIS ROYAL HIGHNESS' PERMISSION,

RESPECTFULLY DEDICATED,

BY THE INDIVIDUALS APPOINTED BY THE SURVIVING SISTER OF THE
LAMENTED AUTHOR TO SUPERINTEND THE PUBLICATION,

W. J. HOOKER, K.H., F.R.A. & L.S., &c., &c.

T. BELL SALTER, M.D., F.L.S., &c., &c.

Kew and Ryde. 1856.



DRAWN BY MISS EDWARDS

ON STONE BY P. J. LANE. A.D. 18

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Kew and Ryde, 1856.

It was a chosen plott of fertile land,
Emongst wide waves sett like a little nest,
As if it had by Nature's cunning hand
Bene choycely picked out from all the rest,
And laid forth for ensample of the best;
No dainty flowre or herbe that growes on grownd,
No arborett with painted blossomes drest
And smelling sweete, but there it might be fownd
To bud out faire and throwe her sweete smels al arownd.

FÆRY QUEENE, *Book II. cant. 6, stan. 12.*

EDITORS' PREFACE.

IN presenting to the public the long looked-for Flora of the late lamented Dr. Bromfield, the Editors feel that a few, and but very few, observations are required from them in explanation.

Dr. Bromfield became resident at Ryde, in the Isle of Wight, in the year 1836, and shortly afterwards conceived the idea of preparing a Flora of the Island. He was not content to follow the usual practice in the making of local Floras and Faunas, and to be satisfied by presenting merely a tolerably full list; but he determined that the investigation should be very complete, and that every species should receive an original description. Nor was he satisfied with a mere cursory research in the framing of these descriptions, or with copying any character from other authors unverified by his own examinations. He was also equally careful to avoid describing general characters from individuals or varieties, and endeavoured, with immense and most persevering care, to select such points as are really the permanent and essential characters of genera and species. To ensure this result he was in the habit of obtaining a very great number of specimens of each species, collected from various localities; and, whenever practicable, he endeavoured to compare Isle-of-Wight specimens with those collected at a distance. Having thus secured sufficient material for investigation, his next aim was to consult every author within his reach for all the characters which different observers had noticed. For this part of his plans he had collected a

very ample botanical library, especially of foreign authors. The characters, however, observed by others were, for his own descriptions, merely suggestive;—none being recorded but such as, after careful examination, he himself found to exist in nature.

The results of these careful investigations were the most accurate and elaborate descriptions which can well be imagined; but such were the time and labour bestowed on each species,—as much as many authors would give to a genus or family,—that this circumstance very materially retarded the progress of the work. Unfortunately, also, when the Isle of Wight had been very thoroughly investigated as regards stations, and the work of describing was proceeding, the author enlarged his plan, and determined to comprise the whole county of Hampshire within the scope of his Flora. This certainly would greatly have added to the value of the work, had he been spared to complete it; but, such not having been permitted, it is impossible not to regret the interruption which the search for localities in this new field occasioned to the description of species. Another cause of interruption to the present work must also here be mentioned. Dr. Bromfield had an intense love of travel, and this desire ever and anon prevailed, and occasioned a suspension of the Island Flora. Extensive tours through the Islands of the West Indies, and through Canada and the States of North America, although they contributed most valuable information to the pages of the 'London Journal of Botany,' very much impeded the progress of the present work. Finally, in 1850, Dr. Bromfield started on an excursion to Egypt, Nubia and Abyssinia; after which he was tempted to prolong his tour into Palestine and Syria, where, alas! he was cut off by fever at Damascus.

Under these melancholy circumstances the manuscript of the unfinished Flora was committed to the Editors by Dr. Bromfield's nearest surviving relative; and here, perhaps, the manner in which they have endeavoured to do their duty, both to her, to their deceased lamented friend, and to the public, requires a few words of explanation.

It soon became evident, notwithstanding the great amount of labour and research bestowed by the author, that the work yet remained in a very fragmentary form. As a Catalogue,

and as regarding the detailed account of localities, the manuscript was complete; but the hiatus of descriptions were very numerous. In many cases, also, the divisions of families and of the larger genera were indicated, but the characters of these sectional divisions not expressed. The Editors were most unwilling to mix up any original co-authorship with the work of their deceased friend; and they have therefore filled up all these blanks, to the best of their power, by quotations from other published works which the author himself had been in the habit of consulting. They have not bound themselves, in this, to follow any one author; but they have in each individual case selected that published work for quotation, which it appeared, by the context or by the sectional divisions, the author was in each instance most nearly following. All these quotations are acknowledged by inverted commas in the usual way; and in those very few instances where the words of others would not suit them, or where new plants or localities had been given them, the Editors have indicated the introduction by inclosure within brackets. This plan has of course occasioned, in some cases, a little want of uniformity in definitions; yet it is thought that this will not occasion any real inconvenience, and that the plan selected is, under all the circumstances, the best which could be adopted.

It does not seem necessary to add a list of the works quoted or the abbreviations made use of in citing them; the former being such as are known, and the latter sufficiently explicit to indicate the work intended. The Editors feel, however, that one abbreviation requires a word of explanation: owing to their not having been aware, at first, of the work intended, and having themselves uniformly mistaken in the MS. one of the letters used in quoting it, Mr. Drew Snooke's '*Flora Vectiana*' is referred to generally as B. T. W. instead of B. I. W.;—which must have been intended for the initial letters of the words '*Botany of the Isle of Wight*.' The edition of the '*British Flora*' always referred to, except otherwise stated, is the sixth edition of that work, by Hooker and Arnott; and that of Babington's '*Manual*,' the second edition; these being respectively the last published during Dr. Bromfield's last residence at home.

While the Editors themselves feel the value of Dr. Brom-

field's work, and confidently anticipate the like verdict from other botanists, they cannot but be most painfully aware how far, in its present form, it falls short of what it would have been had it come in a finished form from the hands of its accomplished and lamented author; yet, with a fond hope that it will be found very useful, they close their mournful yet pleasurable task, and commit to the public the long looked-for FLORA VECTENSIS.

KEW AND RYDE,

May, 1856.

THE AUTHOR'S PREFACE.

Of all the districts into which England is divided by boundaries, either natural or political, there is perhaps no one that offers a more interesting or promising field for botanical research than the Isle of Wight; yet, singular as it may appear, hardly any spot of equal extent, within the same distance from the metropolis, has received so small a share of attention, despite the allurements of scenery, its now flourishing places of public resort, and the facility of access, which the frequency of steam communication with the opposite shores holds out as inducements to visitors. Its situation, on the same parallel with the most southerly counties of England, insures it as genial a climate as the latitude will admit of; and, lying, as it does, contiguous to, and at nearly equal distances from, the eastern and western extremities of the mainland, its Flora participates in the form peculiar to each of these two longitudinal sections.*

* Of species predominant in the East of England, we find *Thesium linophyllum*, *Melampyrum arvense*, *Galium tricornis*, *Myosurus minimus*, *Spartina stricta*, *Calamagrostis Epigejos*, *Bryonia dioica*, *Cineraria campestris* (P), *Rhamnus catharticus*, *Linaria minor*, *L. spuria*, *L. Elatine*, *Antirrhinum Orontium*, *Euphorbia platyphylla*, *Althæa officinalis*, *Asperula cynanchica*, *Ranunculus Lingua*, *Specularia hybrida*, *Campanula Trachelium* and *C. glomerata*, *Bupleurum rotundifolium* and *B. tenuissimum*, *Frankenia laevis*, *Typha angustifolia*, *Chenopodium glaucum*, *Trifolium subterraneum*, *Pulicaria vulgaris*, &c.; whilst, on the other hand, of plants that chiefly affect the western side of the kingdom, we meet with *Rubia peregrina*, *Iris fatidissima*, *Corydalis claviculata*, *Gastrium lendigerum*, *Briza minor*, *Scirpus Savii*, *Androsæmum officinale*, *Wahlenbergia hederacea*, *Coronopus didyma*, *Linaria repens*, *Euphorbia portlandica* and *E. Peplis*, *Pinguicula lusitanica*, *Cyperus longus*, *Anthemis nobilis*, *Cotyledon Umbilicus*, &c.

The natural (and politically adopted) division of the island into the two great and very nearly equal hundreds or liberties of East and West Medina, by the river of that name, suggested the distribution of the localities or stations for the several species under two sections, designated by those districts, as facilitating reference to the map at the head of this work. It will be seen presently that these hundreds differ from each other almost as much in their botanical as in their geological character, and very widely in their more obvious external or physical aspect. The two nearly insulated districts of the island, at its eastern and western extremities, known in former times, and noted in the older maps * as the Isles of Bembridge and Freshwater, have, under these revived names, furnished minor divisions, of no less convenience than the larger in the classification of the above-mentioned stations or localities.

Of the phænogamous plants and ferns described in our Flora, a much smaller number of doubtfully indigenous or certainly introduced species will be found to swell the list than usually occur in works of this description. Of these *dubiæ cives*, some have obtained a right to insertion by prescription and immemorial custom, but which would not on that account have saved them from rejection here, had they not become so far completely or partially naturalized as almost to obliterate the remembrance of their acknowledged foreign descent, as in the case of *Acer Pseudo-platanus*, *Datura Stramonium*, *Linaria Cymbalaria*, *Papaver somniferum*, *Borago officinalis*, &c.

Others, perhaps not less questionably native, have been retained from the difficulty of striking the balance between their contending claims to admission on the score of naturalization, and disqualification as suspected or convicted aliens. Of this class are *Vinca major*, *Centranthus ruber*, *Pyrethrum Pectenium*, all of which, though more or less abundant and even spontaneous, can hardly be regarded but as escapes from cultivation, at periods not very far back. To this list we should perhaps in strictness join, so far at least as concerns this island, *Cheiranthus Cheiri* and *Antirrhinum majus*, which with us are never found remote from habitations, though occasionally pre-

* *Vide* John Speed, 'A Prospect of the Most Famous Parts of the World.' Lond. 1631, fol. (with maps).

senting themselves elsewhere within the realm in situations less open to suspicion. The line of demarcation cannot be so exactly drawn as that, whilst it shall embrace none but plants incontestably native to the soil, it shall not exclude others for the rejection of which it would be difficult to assign a sufficient reason. After all, we may perhaps with truth assert of this island, in reference to the small amount of introduced or naturalized species it contains, that which the philosophical Wahlenberg reports of his own country (Sweden), "*Vix enim ulla alia existit terra, tam bene perseverata, in qua vegetabilia spontanea tam prævaleant et ab adventitiis tam parum premantur.*" *

One chief obstacle in the way of accurately distinguishing the genuine plants of a country from those of extraneous origin arises from the very different ideas entertained of the term "*wild*" amongst such as contribute to the general stock of information on this head from local sources. With some, the occurrence of a single specimen beyond the precincts of a garden or other cultivated spot is a sufficient claim to citizenship; and if gathered in greater abundance there can be, in their opinion, no reason whatever for the exclusion of the species. Happily, observers of this class are not numerous, and a little experience soon teaches them more caution in their conclusions.

Others (and these constitute a majority) are so sceptical as to look with an eye of suspicion upon, and even reject as aliens, a large proportion of species that have been long recognized and admitted by common consent into our indigenous catalogues; and to such it must be conceded that, however mistaken may be their opinions in many instances, they at least err on the safe side. In accordance with my own views on this head is the practice and opinion of Professor Fries.

"*Bene novi aliis placuisse hanc plantam exclusam, illam additam, in his suo utantur judicio; equidem vero non aliorum commentis, sed meæ experientiæ indulgere debui. Eas dico plantas indígenas, quæ per longam annorum seriem sine omni cultura intra provinciam copiose et definito loco propellarunt et quotannis sunt multiplicatæ; exclusis igitur omnibus una*

* Fl. Suecica, vol. ii. p. vii.

alterave vice tantum obviis; parum vero curans utrum planta ceterum auctorum vel primitus introducta videatur; *ad hanc classem ubique longe plures pertinent quam vulgo fingitur et plerumque de hac re certum quoddam statuere impossibile est.*"—*Fries, Corpus Flor. Provin. Suec. i. Fl. Scan. p. xiii.*

In a local Flora like the present, the insertion of a few species of confessedly extraneous origin, provided they are honestly indicated as such to obviate the propagation of error, can be productive of no detriment to botanical science. Such subspontaneous species have *bonâ fide* earned a title to citizenship, by taking possession of the soil; yet their claim as denizens should be admitted with judgment, and only allowed after a tenure of some duration. As a further precaution, it is advisable to mark such interlopers with the brand of *Italics*, the attachment of an asterisk or other sign of exception, or to allot them a separate place in an appendix. The second of these methods I have adopted, as being simple and most in conformity with the general practice of other writers, and because the amount of such *certainly introduced* species is too inconsiderable to be worth while throwing them into a page by themselves.

I am of opinion that the best and safest criterion for resolving doubtful claims to enrolment is to be sought for by reference to the geographical distribution of the species under consideration. The more extended study of this important branch of botanical science would, I am persuaded, go far in removing many of those scruples that are raised against the admission of no small number of our vegetable productions into the aboriginal lists. Proceeding on this principle, I have briefly noticed the geographical range of every plant on which such doubt has been or may be cast, referring to those natural limits as presumptive though not absolute proof in favour of admission, being quite aware that the exceptions to the apparent law of distribution are too numerous to warrant our drawing more than general conclusions therefrom.

In accordance with the sound principle adopted by the botanists of this country in the preparation of general or local Floras, and which our continental brethren would do well in following, every tree, shrub or herb whose sole pretensions to admission rest on the universality of its cultivation, or subser-

viency to purposes of ornament or utility, has been carefully excluded from these pages.* The custom of incorporating the Cerealia, for instance, and the hardier, more common, but exotic, fruit and forest trees with a work professing to treat of

* Almost the only national Flora, our own and that of Denmark excepted, that is not more or less burdened with these conventional objects of mere cultivation, is the admirable 'Flora Suecica' of Wahlenberg, who judiciously reserves for an appendix every species of disputable Scandinavian origin, and so presents us with a faithful transcript of the vegetable geography of that vast peninsula. The opposite practice is unfortunately sanctioned by the authority of DeCandolle, which, it is to be feared, will long continue to uphold the abuse. The otherwise excellent general and local Floras of Lejeune, Host, Reichenbach, &c., and all the older ones, with scarcely an exception, are encumbered with extraneous genera and species. The truly valuable and original trans-Atlantic 'Flora Cestrica' is disfigured by a number of economical garden plants. Nor are our own local Floras free from this defect. The Edinburgh Catalogue of British Plants, which, from being in general circulation as authority for nomenclature, and professing to include a Flora of the district round that city, will afford a fair instance of what has just been advanced. This latter part of its avowed scope and intention gives anything but a faithful register of the indigenous vegetation of the neighbourhood, for, though many species are therein noted as *certainly introduced*, we are left in doubt whether or not they maintain their ground by spontaneous propagation,—a condition indispensable to their retention on the list with any degree of propriety. So long, however, as we perceive such southern and even continental genera and species as *Buxus*, *Castanea*, *Eranthis*, *Linaria purpurea*, *Staphylea*, *Trifolium incarnatum*, *Malcomia maritima*, *Reseda fruticulosa*, and the like, occupying a place in that Catalogue, we must hesitate to regard it as a correct indicator of the genuine aboriginal or even naturalized vegetation of that part of Scotland, in the sense to which that term should be restricted. Judging from the total absence of the above species in a truly wild state in this southerly part of England, in which they might with most reason be expected to occur, but where, in fact, one or two only amongst them are even naturalized, and that but partially and incompletely, no trifling number of the 970 species composing the Flora Edinensis must be the mere outcasts of gardens, or have been purposely planted or disseminated, as I am certain is the case with the Spanish Chestnut wherever it occurs in Britain. Specimens of such worse than dubious natives it may suit the Society to have at hand for distribution amongst its members; but, small as is the value to the herbarium of such semi-domesticated examples, for any purpose of scientific truth their indication in a district Catalogue is utterly worthless. If the same lax rule is to be followed out, why not include the ornamental trees of our parks and pleasure-grounds,—the Horse Chestnut, the Spruce Fir, the Lilac, Laurel, and hundreds more? The transition would thence be easy to the orchard and kitchen-garden, in adopting the productions of which we should have the precedent of continental usage in our favour.

indigenous vegetables only, cannot be too strongly reprobated; since, independently of the necessary increase to the bulk and cost of the book, the species so introduced are, from the effects of culture alone, not legitimate objects of botanical description; their original and specific characters being in a great measure changed and obliterated by the operations of grafting, budding, or cross impregnation, with a view to improve or augment their produce.

Following the same rule, I have omitted such ligneous species as, though of native growth within the realm, are found upon this island only in a cultivated condition in parks and plantations, contrary to the practice too often pursued of swelling local Floras with species thus domesticated, simply because they cannot be called foreign, though virtually so in reference to the limits within which they cease to grow spontaneously. Nothing is more easy than to make a great display of the vegetable riches of a kingdom or province by pressing aliens like these into the list, or by undue multiplication of species from casual varieties or permanent races. Hence originate those bulky tomes of French and German authors, teeming with the laboriously acquired *gifts* of Ceres and Pomona, which, as they have nothing to do with the spontaneous outpourings of the lap of Nature, must be deducted, to form a correct estimate of the vegetative force and features of the country and climate, under the only relation in which these can be either interesting or instructive to the botanical investigator.

These remarks will doubtless appear to some persons misplaced and uncalled for, inasmuch as it may be thought that works of a similar kind in this country are not chargeable with the practice animadverted upon. But if the objects introduced be not exactly the same, the little selection shown in the drawing up of too many of our local and provincial lists of plants betrays a latent inclination to extend the catalogue to a greater length than the actual range of many species would warrant. Even in the more carefully expurgated of these productions, how often do we see very exceptionably sounding habitats assigned for certain ligneous species, such as "in plantations," or, for the various willows, "in osier-grounds,"—stations which carry condemnation in their very name. If much caution be necessary in admitting the claim of certain herbaceous plants

to a place in the indigenous catalogue, how greatly more circumspect should we be in allowing those of a tree or shrub, when, from their perennial and enduring constitution, it is always difficult and sometimes impossible to determine whether the hand of Nature or that of man has been the instrument of their dispersion.

For plates illustrative of the species, in addition to those of 'English Botany,' which are regularly quoted throughout this work, others, in foreign publications, are occasionally referred to when peculiarly expressive of the plants they represent. The beautiful figures in the 'Flora Danica,'* the later volumes of which make ample amends in general for the great inequality of the earlier, and too often, as regards engraving, colouring and nomenclature, disgraceful execution of the intermediate parts, have been consulted with advantage in several instances. In the genus *Carex* the accurate plates of Schkuhr, with the supplementary ones of Kunze, have been in most cases quoted under each species.

The full-sized and admirable delineations in Curtis's 'Flora Londonensis,' and of its continuation by Graves and Hooker, are seldom passed uncited; and I have gladly availed myself of the small but expressive figures of my friend John Curtis, Esq., in his unrivalled 'British Entomology,' as far as they have been drawn from specimens gathered in the Isle of Wight, of which they are the elegant and all but living vouchers.

The descriptions of the species were in all instances, with very few exceptions, drawn up from *fresh* specimens collected in the island; and in those cases where, from the scarcity of the plant, recourse was necessarily had to recent or dried examples from other parts of the kingdom; or, in default of these, to the descriptions of other authors, such deviations from the ordinary practice are invariably recorded, and the sources of information faithfully pointed out, and acknowledgment made when due. That no characters of importance might escape

* This celebrated work, one of the most sumptuous and complete of national illustrated Floras, has, since its commencement in 1764, been conducted by editors of very unequal merits, as is lamentably apparent in particular portions. Under the able superintendence of the present editor, Vahl, it has more than regained its ancient reputation.

unobserved, the descriptions have been carefully compared with those of the best British and foreign authors either at the moment of drawing them up or subsequent to their compilation, always with the fresh specimens at hand for renewed comparisons in the minutest particular. In this way most of the descriptions have been gone over twice, and in many instances three times, often at very distant intervals, and with recent specimens from other stations in the island.

In all cases where the abundance of the species permitted it, the account of each has been compiled from a series of individual specimens, of different sizes, and, as far as possible, exhibiting every variety of colour and aspect incident to the plant in its normal state. By thus proceeding we learn to distinguish what is permanent and essential from that which is but occasional or fortuitous in character, and thus avoid the error which, in minute detail and with scanty means of comparison, we run great risk of committing,—the assumption of individual peculiarity for absolute and specific difference.

The use of linear measure has been generally adopted in the descriptive part, since size is often as discriminative of natural objects as form or colour. Every one must have felt how imperfect is the idea conveyed to the mind by the most laboured description of a plant, whilst left in ignorance of its absolute or relative proportions. Besides, the same species of vegetable often varies so much in its dimensions under different conditions, favourable or the reverse to its development, that comparative terms of admeasurement, as high or low, long or short, broad or narrow, large or small, lose all their value and significance.

For all the species described in this Flora, excepting only the very commonest, distinct or special localities are assigned, with a view of saving the too-often hurried stranger, possible loss of time in following up general indications to the object of his search.

To the majority of stations for the rarer or more local plants will be found added the date of discovery of the species recorded, which to some may have the appearance of giving an undue degree of importance to their detection, without imparting information of practical use or interest to the collector. But when it is considered how rapid are the changes which

the surface of this island is yearly, monthly and daily undergoing, from the progress of building and its invariable attendant, increased cultivation;—low lands, but lately waste, now inclosed, and spots not long since free, and accessible to every wanderer in search of health or recreation, at this time dotted with tenements, their sites fenced from the intrusion of stranger footsteps with the jealous exclusiveness of individual appropriation;—it will be evident that the *first* recorded station for some rare or local plant may often be the *last* on record: the onward course of improvement may have swept such species from our soil, when it becomes a matter of interest, not merely to learn the fact of its having once existed, but, by dates, to ascertain the time up to which at least it was known to have occurred amongst us. By the remoteness of these dates we can in some measure calculate the probability of rediscovering plants that have thus apparently become extinct; since, by how much longer is the interval during which the search for such lost species has been unsuccessfully renewed, by so much are the chances diminished of again meeting with them in their original places of growth. The botanist is thus spared a waste of time and trouble, and his attention diverted from destroyed or exhausted localities to others likely to reward him with the same or even more valuable acquisitions.

The flowering time of each species in the climate of the Isle of Wight has been carefully noted from personal observations through a series of years, and will be found often to differ materially from that indicated for the same species in books, where the season of blossoming is commonly made to appear much shorter than it really is, to the manifest detriment of the inexperienced botanist, who, trusting to the correctness of such indications, is led to look for a species in its perfection in June or July which he might have gathered as fully in blossom in May, or continued to find flowering on in August or September.

Our times and seasons cannot of course furnish a correct Floral calendar for the more northern parts of the kingdom, though practically applicable to all the southern, and perhaps with tolerable exactness to many of the midland, counties of England. My indications were, however, intended for the Isle

of Wight alone, and beyond its limits I do not hold myself accountable for their accuracy.

When the flowering period is expressed by an interval of three or four months, the initial and terminal month, or at least the greater part of each, is to be understood as included in that space of time. So likewise with some of the early spring flowerers: the naming of two successive months denotes that such species may, in favourable seasons, be gathered with considerable certainty during the first, and in all ordinary years during the second, month in a perfect state of inflorescence. Besides the flowering, the fruiting or seeding time has been marked for each species, as far as could be accomplished by observations, no less carefully made, although more recently begun. * This adoption of the season of fructification is borrowed from the excellent American 'Flora Cestrica' of Dr. Darlington, † and though, I believe, nearly a novel feature in a European Flora, ‡ will, I think, be found useful to the carpological inquirer, as also to the botanical cultivator, by pointing out to them the proper time for collecting seeds in a state fit for their respective purposes. But since the process of maturation is in general slow and protracted, and, compared with that of inflorescence (with which, in its later stages, it often advances *pari passu*), marked by no well-defined period of commencement or completion, the same accuracy of indication is hardly attainable for the fruiting as for the flowering season, depending, as the former does, still more than the latter, on temperature for its advancement or retardation.

* [It is to be regretted that the author had, to a very limited extent only, carried out this part of his intentions, although in his MS. a space had been uniformly reserved for the result of his observations on this head.—*Edrs.*]

† 'Flora Cestrica, an attempt to enumerate and describe the Flowering and Filicoid Plants of Chester County, in the State of Pennsylvania,' by William Darlington, M.D., 8vo, 1837.

‡ It was partially carried out by Pollich, in the 'Flora of the Palatinate.'

INTRODUCTION.

FROM the situation of the Isle of Wight on the southern boundary line of the Agricultural Zone of Watson, we everywhere recognize the appropriate features of the latter in the general aspect of vegetation, whether native or introduced. We find the cultivation of wheat predominating over that of all other grain, and producing as plentiful returns on the exposed crests of the loftiest cliffs, or within a few yards of the sea-beach, as in the sheltered valleys of the interior. The Vine and the Fig are common even in the cottager's garden, the latter always, as a standard, bearing abundant and luscious fruit; whilst, in addition to the more ordinary orchard-trees, the Quince, Walnut and Mulberry ripen perfectly, and produce plentiful crops. Both the narrow- and broad-leaved varieties of the Myrtle (*Myrtus communis*, L.) form stout bushes in the open air, and mature their fruit in many places, even on the North side of the island and in the cold soil of Ryde, suffering in very severe winters only, and are then seldom more than partially killed back in exposed situations, as many very old and vigorous trunks attest in various places. The Sweet Bay (*Laurus nobilis*, L.) attains the dimensions of a tree, and ripens its berries in abundance, resisting our severest frosts, as does the Laurustinus (*Viburnum Tinus*, L.), which gives to our gardens and shrubberies at mid-winter the verdure and bloom of summer, though its fruit is more sparingly perfected. The

Strawberry-tree (*Arbutus Unedo*, L.) is equally common and hardy with the two last, fruits pretty freely, and grows to a tree of respectable size, though inferior to the timber-like dimensions it acquires on its native rocks in the South-west of Ireland, or even in the South-western counties of England, where the greater moisture of the atmosphere eminently favours the development of this, as of most other evergreens. But if the greater cold of our climate in winter and its greater dryness at all seasons tend to check the luxuriant growth of these and other sempervirent plants, the comparative absence of humidity and a less clouded sky enables the increased heat of summer to ripen the wood, and so fit it to endure a degree of frost it would else be unable to withstand. So happily balanced, in the climate of the Isle of Wight, are the vicissitudes of heat and cold to which it is occasionally subject, from its proximity to the mainland and to the Continent of Europe in a degree unusual to insular situations, that the former repairs, or rather counteracts, the destructive agency of the latter on vegetation.

If we turn from the aspect of the exotic to that of the indigenous vegetation of the island, we recognize the abundant predominance of those trees, shrubs and herbaceous plants which Mr. Watson considers as eminently characterizing the climate of the inferior belt of the lower Agricultural Zone, together with many other species scarcely less indicative of the finest wheat region. We here find *Acer campestre*, *Cornus sanguinea*, *Viburnum Lantana*, *Ligustrum vulgare*, *Sambucus nigra*, *Eunymus europæus*, *Ulmus suberosa*, amongst the commonest productions of our woods, thickets, and the luxuriant hedgerows that bound our fields, and over which *Tamus communis*, *Clematis Vitalba*, *Humulus Lupulus*, *Rubia peregrina*, *Bryonia dioica*, *Lonicera Periclymenum*, *Solanum Dulcamara* and *Convolvulus sepium* ramble in rich and often oppressive profusion.

From its close proximity to the mainland of England, the Isle of Wight exhibits less insularity of character in its Flora than any of the other islands forming part of the British group, scarcely differing, except in the absence of some few genera and species and the greater prevalence of certain others, from the Botany of the opposite part of Hampshire. If we compare the Flora of the Isle of Man, and even of Anglesey, still more that of the Hebrides, Orkney and Shetland Islands, with those of

the counties lying nearest to them on the mainland of Britain, we still perceive a marked disparity in the number of species produced on areas of equal extent in both, the balance being in favour of the latter or continental districts. The same relative paucity of species obtains in the Channel Islands of Guernsey and Jersey as compared with the adjacent coast of France; and this inequality of distribution becomes more obvious the greater the interval betwixt the islands and the main, and the smaller the area of the insulated territory. Even with the advantage of climate which a more genial latitude affords, the Flora of small islands, very remote from larger or from continents, is poorer in species than that of other islands of greater extent and less perfect isolation, though lying under a colder parallel. Thus the whole group of the Azores, although pretty completely explored by the labours of Watson, Hochstetter and others, produces little more than one-third the number of phænogamous species afforded by the Isle of Wight, notwithstanding their more southerly position, and the far greater variety of elevation which the mountainous surface of some amongst them presents for the extended multiplication of species.*

The Channel Islands, though not rich in species for their size, have, in consequence of their less extent and greater distance from the mainland, a more completely insular or maritime Flora than the Isle of Wight, as the absence from that group of the following rather inland or continental genera and species, found in the latter island, will testify:—

<i>Clematis Vitalba</i>	<i>Specularia hybrida</i>
<i>Thalictrum flavum</i>	<i>Rhamnus catharticus</i>
<i>Campanula (omnes)</i>	——— <i>Frangula</i>

* Mr. H. C. Watson, in his 'Catalogue of Azorian Plants' (see Hooker's 'London Journal of Botany' for November, 1844), makes the total number of flowering species amount to 319, and of ferns to 31, or 350 species in all. A large proportion even of these are common to England and the Azores, and, though some plants no doubt remain unrecorded inhabitants of those islands, the above census cannot be very far short of the number actually existing therein. Even in the tropical Island of Barbadoes, the catalogue of phænogamous species and ferns, enumerated by Sir R. Schomburgh, amounts to but 896, and of these not above one-half would seem to be indigenous, the rest being chiefly plants cultivated for ornament or use, with a few that have become naturalized.

It is probably owing to its actual, but modified, insularity that the following eminently mainland species, natives of Hants, are wanting to the Isle of Wight, although abounding in localities apparently well suited to their production :—

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|-----------------------------------|------------------------------------|
| 1. <i>Convallaria majalis</i> | 11. <i>Melampyrum cristatum</i> |
| 2. ———— <i>multiflora</i> | 12. <i>Daphne Mezereum</i> |
| 3. ———— <i>Polygonatum</i> | 13. <i>Viscum album</i> |
| 4. <i>Fritillaria Meleagris</i> | 14. <i>Hordeum sylvaticum</i> |
| 5. <i>Paris quadrifolia</i> | 15. <i>Tillæa muscosa</i> |
| 6. <i>Acorus Calamus</i> | 16. <i>Sagittaria sagittifolia</i> |
| 7. <i>Actinocarpus Damasonium</i> | 17. <i>Hydrocharis Morsus-ranæ</i> |
| 8. <i>Campanula patula</i> | 18. <i>Cephalanthera ensifolia</i> |
| 9. ———— <i>Rapunculus</i> | 19. <i>Dipsacus pilosus</i> |
| 10. <i>Phyteuma orbiculare</i> | |

It is not so easy to assign a cause for the apparently total absence from the Vectic Flora of the subjoined plants, all of which are natives of the county, where, as in other parts of the kingdom, they seem either to evince no particular partiality for an inland over a maritime locality, or, as in the case of some of those now enumerated, decidedly abound most on or towards the sea-coast. These last are, for distinction, printed in *Italics*.

- | | |
|------------------------------|--------------------------------|
| <i>Drosera longifolia</i> | <i>Cicendia filiformis</i> |
| ——— <i>anglica</i> | <i>Bartsia viscosa</i> |
| <i>Matricaria Chamomilla</i> | <i>Euphorbia paralia</i> |
| <i>Teesdalia nudicaulis</i> | <i>Lycopodium inundatum</i> |
| <i>Diplotaxis tenuifolia</i> | <i>Spiranthes æstivalis</i> |
| <i>Isnardia palustris</i> | <i>Hypericum dubium</i> |
| <i>Crambe maritima</i> | <i>Polypogon monspeliensis</i> |
| <i>Petasites vulgaris</i> | <i>Littorella lacustris</i> |
| <i>Centaurea Calcitrapa</i> | <i>Cardamine amara</i> |

To these should perhaps be added *Helleborus viridis*, *Taxus baccata* and *Lysimachia Nummularia*, all of which are confined, in this island, to single and very suspicious stations ; those for the first and third have indeed been since destroyed.

It may be here observed, that the limitation of any plant to a single locality, and its restriction in that locality to even a single specimen, is, *per se*, no sufficient reason for its rejection

as adventitious, because it is well known that plants will, in particular districts, where soil, climate or other causes are adverse to their increase, continue so scarce as to be reduced to a numerical minimum little short of absolute extinction, and yet pertinaciously maintain their footing if undisturbed. Of the former part of this proposition at least, *Cephalanthera grandiflora* and *Euphorbia Peplis* present, in this island, notable examples; a solitary specimen of each of these having alone been picked, but in situations so exactly conformable to their natural places of growth in other parts of the country, as scarcely to afford ground for their rejection on the score of their paucity, whilst no exception can be taken to the species themselves. It is indeed hardly credible that an orchideous plant like the former could have been purposely introduced,* though it is just possible that the latter may have been transported by the waves from the coasts of Devon or Cornwall to the beach at Sandown.

All of these, it may be remarked, are rare, or gradually disappear in the farthest South-western counties of Devon and Cornwall, and are totally wanting, with many others, in every one of the smaller islands of the British group, excepting 16 and 17, that occur in Anglesey and Ireland, the Flora of which last, its size considered, exhibits in an extreme degree the character of a western and island vegetation, both in the paucity and peculiarity of its indigenous species, and resembling in these respects that of New Zealand, the Azores, and other island groups lying remote from any large tracts of land or continent.

It is observable that *Rhamnus catharticus*, *Bryonia dioica* and *Campanula Trachelium*, three species characteristic of the eastern and interior rather than of the western and coast Flora of

* Every one knows the difficulty attending the cultivation and preservation of the terrestrial Orchidaceæ, and how little gregarious is the greater number of the tribe. This holds true of *Habenaria viridis*, which, seldom plentiful at any time on a given station, is in this island so reduced in frequency that I have seen but three, and those collected by others, in more than thrice as many years, during which time I have not once fallen in with a specimen on any of my innumerable herborizing walks within the limits of this Flora.

England, and which are extremely rare and local, if really indigenous to Scotland and Ireland, show a marked tendency to avoid the coast line of the Isle of Wight in every part of its periphery, and to retreat towards the central, and as it were more continental, portion of it. All three are plants eminently attached to calcareous soils,* and, though that condition for their maintenance is afforded them by the extension of the chalk and limestone to several points along the shore, in vain should we look for a specimen of any one of them betwixt the Foreland and the Needles, or from thence along the North side of the island to the mouth of the Medina, within a distance, in most cases, of several miles from the sea-beach. It is true that on the mainland the Bryony at least grows in many places near the sea-beach, but the indefinite extent of country at the back gives such shore stations a comparatively continental character.

The following species evince, in the Isle of Wight, a power of occupancy not very greatly superior to that shown by the plants just named, but which are as certainly indigenous as any others of greater frequency and abundance :—

<i>Habenaria viridis</i>	<i>Cladium Mariscus</i>
<i>Ophrys aranifera</i>	<i>Thalictrum flavum</i>
<i>Butomus umbellatus</i>	<i>Asparagus officinalis</i>

Whilst we may cite, as holding a very insignificant amount of space in our island Flora, *Botrychium Lunaria*, *Lastrea Oreopteris*, *Asplenium marinum*, *Spiræa Filipendula*, *Orobanche cærulea*, *Listera Nidus-avis*, *Vaccinium Oxycoccos*, *Dianthus Armeria* and *D. prolifer*, all equally indigenous with those before enumerated, though concentrated in small quantity on solitary points as it were of the country, or scattered individually over it at few and distant intervals.

The absence of a very large, and indeed the greater, proportion of the genuine aquatic plants of Britain is a peculiarity in the Isle-of-Wight Flora, the cause of which is manifestly the

* The Bryony is found on the green sand in several places S. and S.E. of Newport, as at Sandway, Pagham, Perreton and Redway, as well as on the chalk, to which the two remaining species in question are confined.

want of appropriate and congenial places for their growth and dispersion, which extensive bodies of water afford; something being doubtless due, as we have lately seen, to climate and insularity of position. Omitting a few insignificant ponds, pools and dams, of mostly recent and artificial construction, the natural drainage of the island is effected chiefly by some half-dozen or so of sluggish streamlets, fed by the numerous fine springs with which the island abounds, that break out at the base of the chalk ranges, and find their way, through narrow devious channels, to the sea. The water of these streams is mostly turbid, from the *detritus* of the rocks they flow over; and their motion, though slow, combined with the depth and narrowness of the channels they pass along, are all unfavourable to the growth of such purely aquatic plants as require the clear, broad, shallow and tranquil element for their habitation. Moreover, the water of those streams that meander through the boggy valleys of the Medina and Main River, and of the drains and ditches communicating with them, is contaminated with peroxide of iron from the ferruginous sandstone, or the decomposition of the pyritic nodules that abound in the chalk and tertiary formations, and which impregnation cannot but be injurious to some aquatic vegetables. From all these causes united it doubtless happens that the following genera and species of true water-plants are strangers on this side of the Solent:—

<i>Nymphæa</i> (introduced?)	<i>Ceratophyllum</i> ?
<i>Nuphar</i>	<i>Stratiotes</i> (introduced)
<i>Sagittaria</i>	<i>Acorus</i>
<i>Hottonia</i>	<i>Actinocarpus</i>
<i>Hydrocharis</i> (introduced)	

Whilst, of species belonging to genera of which representatives occur in the island, we miss—

<i>Sium latifolium</i>	<i>Potamogeton perfoliatum</i>
<i>Oenanthe Phellandrium</i>	<i>Nasturtium amphibium</i>
„ <i>fluviatile</i>	<i>Glyceria aquatica</i>
<i>Myriophyllum verticillatum</i>	

The moderate difference observable in the temperature of the seasons betwixt this island and the northern parts of Britain, that of summer in particular, may well appear inadequate to produce so striking a contrast as we find on comparing together the Floras of Newport and Edinburgh. Other elements, scarcely less potent than temperature, here come into operation, to determine the balance greatly in favour of the former. If the heat of our summer be not very much above that of the North at the same season, it is protracted into an autumn of longer duration, dryness and serenity, better able to ripen the vegetable tissues, and bring the seeds of plants to maturity. From our proximity to the continent, and the greater breadth of the mainland of England along its southern coast than elsewhere, our atmosphere is less loaded with clouds and vapour than is that over the narrow and deeply indented promontory of North Britain, environed by a wide expanse of water on three sides, without any adjacent surface to arrest the deposition of moisture from the Atlantic, much of which is precipitated, before it can reach this island, upon the peninsular counties of Cornwall and Devon. Hence the amount of direct solar radiation, so active an agent in developing a varied and vigorous vegetation, is oftener and more continuously exerted here than at the North, proving more equivalent in energy to the power of a diffuse light, protracted through days considerably exceeding our own in length at the season in question.

Another peculiarity in our island Flora is the relative scarcity of certain plants characteristic of the chalk formation, as compared with their abundance on the cretaceous deposits of the mainland of Hampshire. We may instance *Fagus sylvatica*, *Echium vulgare*, *Cichorium Intybus*, and *Verbascum nigrum*, which are there quite sporadic, and form no prominent feature of the chalk-country vegetation. Our downs are not, as there, crested with picturesque and venerable yews, of unknown antiquity, their precipitous flanks clothed with woods of umbrageous beech, or dotted with dark compact clumps of the more humble but aromatic juniper. The same paucity of individuals is observable in many other plants common to both parts of the county, which, very rare or local in the Isle of Wight, are of general occurrence, or at least are more plentiful where they do occur, on the mainland of Hants, such as *Coro-*

nopus didyma, *Linaria repens*, *Pyrus aucuparia*, *Cochlearia danica*, *Frankenia levis*, *Chelidonium majus*, *Valeriana dioica*, *Verbascum nigrum*. Some, however, there are that abound more in the island than on the main, as *Ligustrum vulgare* and *Rubia peregrina*.

It might be concluded, from the extent of coast-line which our insularity commands, that the Flora of the Isle of Wight would be particularly rich in marine or littoral plants; but, though our sea-shores are not deficient in species interesting from their beauty or rarity, the geological structure of the greater part of the coast is unfavourable to their permanent establishment. Along the whole southern shore from below Sandown village to Rockin End, and from thence westward to the Needles, the sea washes the feet of the cliffs or the banks of slipped land at their base, on which alone it is possible for any vegetation to fix itself. The cliffs, in most parts perpendicular, can afford footing but to few plants, whose tenure, from the crumbling nature of the rock, is very brief and precarious. These therefore are mostly grasses, as *Agrostis alba* (which fringes the cliffs at Shanklin), or such other small plants as can cling longest to the treacherous soil, or find room to flourish on the narrow water-worn ledges. The slipped banks beneath the cliffs, composed of the *débris* of these last, and of the clays, &c., of the lower greensand, are hardly more stable, being constantly in a state of change from the undermining action of the waves and the percolation of landsprings, often charged with iron, that issue from the face and bottom of the rocks above, which, made more friable by the infiltration of water and the disintegrating action of frost, fall from time to time in vast masses, burying the vegetation at their feet to a considerable depth beneath the ruins. The generally wet and tenacious character of the soil composing these slipped banks is ill suited to plants that love a dry, loose, sandy or pebbly beach, and which would therefore be sought for in vain along the line of coast we have been speaking of. The vegetation (in many places very scanty) that covers these accumulated disruptions is mainly derived from the rock above, whatever that may be, and consequently varies with its geological character in different parts along the entire line of coast, modified also, in some measure, by the nature of the softer substratum, forced out from

beneath the superincumbent upper beds of chalk or sandstone.

We may here take a rapid view of the vegetation of the cliffs, and of the slipped land at their base, before proceeding to give a sketch of the maritime Flora of the island, properly so called, from which the former is perfectly distinct.

It may be easily imagined that the cliffs themselves, from their friable constitution and perpendicularity, are nearly bare of vegetation, even of the humblest kind, and such is for the most part the case. Some few plants, however, make a shift to maintain their position, and even flourish vigorously, on the bare face of the chalk and sandstone, as did, for instance, *Frankenia levis*, some years ago, on the naked wall of chalk forming the magnificent arch or concavity of Scratchell's Bay, till overwhelmed by a fall of loosened fragments from the summit. A little further eastward, towards Freshwater Gate, in that part of the majestic line of cliffs called the Main Bench and the Nodes, broad flat ledges or terraces occasionally break the wall-like uniformity of this stupendous barrier of chalk, and by the shadows they create relieve the else unvarying whiteness of the absolutely denuded precipices. These shelves or ledges, technically known as "meads" and "greens" amongst the cliffsmen are visited, at stated times, by that hardy and adventurous race, in their dangerous avocation of samphire-gathering, collecting the eggs of sea-fowl, or robbing the peregrine falcon of her half-fledged young.* Some of these "greens" are of considerable extent; one of them, and I believe the largest, is called Rosehall Green, and its area is estimated at about an acre. Unlike most of the others, it is accessible by a tolerably easy descent from above, and, in common with them, is covered with

* The eggs of different species of *Larus*, that resort in vast numbers to these cliffs in the breeding season, when collected, are forwarded by the cliffsmen to persons in London.

These cliffs were, till within these few years, farmed by the collectors of eggs and samphire, of the lord of the manor, at an annual rent. Since then, the latter has waived his right to this source of revenue; and the withdrawal of all restrictions on collecting, by encouraging general competition, has greatly diminished the profits of those formerly engaged in the business.

A further account of the mode of collecting and preparing samphire for the market, as practised in this island, is given, under the head of that plant, at p. 213 of the present work.

a dense growth of *Atriplex patula*, var. β . (*A. prostrata*, Bouch. ? Bab. Man. ?), *Halimus portulacoides*, *Crithmum maritimum*, *Beta maritima*, and *Parietaria officinalis*, this last in its most truly natural station. *Pieris hieracioides*, here abundant, offers itself a congenial recipient for the parasitic attachment to its roots of *Orobanche minor*.

Passing Freshwater Bay, and nearing that of Compton, the same chalk-cliffs, continued eastward after their interruption at the former, present us with the excessively rare and charmingly fragrant Sea Stock (*Matthiola incana*), which grows abundantly and indubitably native on their most exposed pinnacle, and, springing from their bare and even perpendicular face, defies the storms of winter and the grasp of all who covet its spicy and richly coloured blossoms, save that of the bold and dauntless cliffsman, whose services a trifling remuneration will at any time secure to weaker heads and less adventurous limbs, in plucking this floral prize from its perilous and dizzy domicile. Though most attached to the chalk, the *Matthiola* passes the point of junction of that formation with the greensand, gradually diminishing in frequency as the wealden is approached, on or near which it soon terminates, to reappear, for the last time, at Steephill, a distance of at least twelve miles from its western station.

Proceeding still South-east, the sandy cliffs are of too loose and crumbling a nature to afford even a transient footing to vegetation of any kind,* and the banks of *débris* at their base, where they exist, afford few or no plants of interest. *Erodium maritimum* grows at the entrance of Brook Chine, and *Plantago Coronopus* occurs in unusual plenty and luxuriance along the top of the cliff from Compton Bay to Blackgang, where, just before arriving at the Chine, *Eriophorum vaginatum* has been

* The deep fissures which run parallel with, and behind the edges of, these cliffs, attest their constant destruction and recession inland, and by planting the feet against them a slight effort will hurl down masses of many hundred weight, already tottering to their fall, upon the beach beneath. The footway along the fields from Sandown to Shanklin, as I remember it ten or twelve years ago, has quite disappeared, the cliff having retrograded in that time more than as many feet, I might even say yards; and the existing path must soon cease, if it has not already done so, to direct the steps with safety along the verge of this treacherous precipice after nightfall.

found in the wet depressions of the sandy banks, along with the far more common *E. polystachion* or *E. latifolium* (*E. pubescens*, Sm.) Rounding the southernmost point of the island, we find, on the shore at Puckaster, *Convolvulus sepium*, var. *incarnata*, and that remarkable form of the common Reed (*Arundo Phragmites*), with prostrate or trailing stem, of extraordinary length.

The surface of the Isle of Wight is generally undulating, being traversed centrally, from East to West, by a continuous range of chalk downs, the spurs or branches of which reappear on the South side of the ridge, in detached masses of considerable elevation. The highest of these, St. Catherine's Down, rises [712] feet above the sea; but, since vegetation is not materially changed at that altitude, most of the plants growing on their rounded summits may be found in greater perfection and with more certainty at or near their bases than higher up, where the herbage is kept close-cropped by the numerous sheep that pasture on their smooth and steeply sloping sides.

The hundreds of East and West Medina differ widely in the relative proportion of wood, meadow and arable land they contain. The former is well watered, and better fitted for pasturage than the latter, which is a more open or champaigne country, adapted for corn, that is here raised in great quantity; but very partially wooded, though including within its limits the ancient chase or forest of Parkhurst, now a mere government nursery for growing oak for the dockyards. That tract of West Medina to the South of the central chalk range is almost destitute of wood, and the soil light and sandy.

In former times the island was so thickly timbered that a squirrel, it is said, might have traversed its entire length by leaping from tree to tree; and, though this tradition bears somewhat the impress of exaggeration, it is very certain that the progress of agriculture and the requirements of the dockyard at Portsmouth have been, and are still, operative in robbing the island of its sylvan honours. The only continuous tract of natural woodland now existing is in East Medina, on the North side of the chalk range, and marked by the course of the stream which empties itself into the Solent below Wootton Bridge, forming a labyrinth of coppice, interspersed with pasture and arable, generally flat, and the timber of very moderate

scantling.* Other copses, various in extent, are scattered over the North-eastern quarter of the island, the soil of which is in general a stiff clay, excepting immediately at the foot of the chalk downs and westward towards the Medina, where it assumes more of a gravelly nature.

To the South of the downs in East Medina the lower green sandstone predominates; the country undulates more remarkably, and rises into numerous often abrupt eminences, presenting a varied surface of corn and pasture land, heath, down, craggy cliffs, with marshy valleys and deep boggy thickets. Towards the South and South-eastern coast-line of this hundred the chalk reappears, as a second, much interrupted and far shorter range, in the steep round-topped escarpments of St. Catherine's (Niton), St. Boniface (Shanklin), and Rew Downs, rising with an abruptness and to an elevation sufficient to give almost the dignity of a mountainous background to the majestic and picturesque terraces of Eastend and Undercliff, lying immediately at their feet. The great longitudinal chalk ridge terminates suddenly, at its eastern extremity, in the Culver Cliff, which rises perpendicularly to about 400 feet, forming the northernmost point of Sandown Bay and the South-eastern boundary of the peninsula known by the name of Bembridge Island. The same ridge, after its dislocation at the valley of the Medina, is continued westward, with but little interruption, to its termination in the bold and lofty headland whose talus forms the magnificent cliffs of Freshwater and Alum Bay; whilst the numerous spurs or escarpments, that diverge in all directions from the principal longitudinal chain of summits, form hollows or basin-like valleys and sinuosities between them, whose steep declivities are mostly clothed with patches of hanging copsewood.

The island is divided, nearly its entire length, in a due North and South direction, by the river Medene or Medina, which, winding from its source along the bottom of a boggy valley as an insignificant stream, becomes navigable immediately below Newport for vessels of small burden. It also serves as the

* In the early part of the late war, when oak commanded a high price for the navy, the present Sir William Oglander cut down, on his estate at Nunwell, timber of this description to the value, it is said, of £80,000 sterling.

boundary mark of the two hundreds of East and West Medene or Medina,—a division both politically and botanically convenient, from the nearly exact equality of these districts in point of size.* Four other streamlets of less note intersect the country, two in each hundred, besides several other still smaller rills. Of the former, there is, in East Medina, first, the Wootton River, betwixt Ryde and Cowes, navigable as high as Wootton Bridge, and winding its way between woods from its source to the sea; secondly, the Main River or Yar,† as long as or longer than the Medina itself, which, rising from near the southernmost point of the island, flows, in a North-easterly direction, through an extensive tract of boggy meadows by Newchurch, and, gradually expanding into the broad delta of Sandown Level, empties itself into Brading Harbour. In West Medina, the Yar (properly so called) and Newtown Rivers are rather estuaries of the sea, with salt-marshes along their banks, partially overflowed at high water. On the latter arm of the Solent are several salterns, where salt of excellent quality for curing bacon is manufactured, by the evaporation of sea-water, partly by the heat of the sun and partly by boiling. The edges of the “pans” or shallow evaporating basins of these saltworks are thickly fringed with various maritime plants, some of them rare, and flourishing in contact with brine of a high degree of concentration. Amongst these are *Inula crithmoides*, *Bupleurum tenuissimum*, *Frankenia lævis*, *Salicornia radicans*, &c.

Besides the five principal streams we have mentioned, and the many still smaller brooks and rivulets, are innumerable drains and ditches in the marshy valleys of the interior; yet, from causes which will be adverted to hereafter, our Flora exhibits a remarkable deficiency of genuine aquatic plants, most of those which are common in other parts of the kingdom being with us wholly wanting or very rarely met with.

The Isle of Wight is situated nearly midway betwixt the extreme points of the southern coast of England, or a little to the eastward of its central meridian, lying between 50° 34' and

* From this central course the Medina derives its name.

† This must be carefully distinguished from the other river so called, in West Medina, at the mouth of which stands the town of Yarmouth.

50° 47' N. latitude, and 1° 4' and 1° 36' W. longitude,* its mean distance from the opposite coast of Hampshire, by which it is partly embayed, and from which it is separated by the Solent channel, is about three miles, in some places considerably less. In form the island has been compared to that of a lozenge or rhomboid, the two extreme diameters of which have their axes corresponding, as nearly as possible, to the four cardinal points of the compass. Its greatest length from East to West, or from the Foreland Point to the Needles inclusive, is 23 miles; that from North to South, or from W. Cowes Castle or Egypt House to St. Catherine's Point, [13 miles†]. The total area is estimated at [upwards of 100,000 acres.‡] The length of the longest day at Newport (N. lat. 50° 42' 1") is 16h. 16m. 13s.; of the shortest, 7h. 43m. 44s., or—uncorrected for atmospheric refraction, which in this parallel increases the apparent length of the day by about 9 minutes—16h. 25m. 14s., and 7h. 52m. 37s. respectively. Constant twilight prevails for 51 days, commencing on the 27th of May and ending on the 17th of July, but is so feeble, even at the solstice, in this latitude, towards midnight, as probably to exert little or no influence over the nocturnal repose of vegetation, which in higher latitudes must

* The following are the latitudes and longitudes of several points in the Isle of Wight, as determined by the trigonometrical survey of England, and given in Sir H. C. Englefield's Description of the Island (London, 1816, 4to, Payne and Foss, 88, Pall Mall, p. 4), and from other authentic sources:—

	N. LAT.	W. LONG.
Ashy Down sea-mark	50° 41' 6".	1° 10' 57".
Dunnose Head station	50° 37' 7".	1° 11' 36".
East Cowes sea-mark	50° 45' 37".	1° 16' 15".
*West Cowes Castle	50° 46' 1".	1° 17' 42".
St Catherine's Lighthouse (Old)	50° 35' 33".	1° 17' 50".
†St. Catherine's Lighthouse (New)	50° 34' 50".	1° 17' 51".
Carisbrook Castle	50° 41' 17".	1° 18' 25".
Needles Lighthouse	50° 39' 53".	1° 33' 55".
‡ Newport (St. Thomas's Church)	50° 42' 1".	1° 17' 18".

* By corrected observations of Sir H. C. Englefield.

† Communicated by the Trinity Board to the author of this work.

‡ Mr. D. Snooke.

be in a great measure suspended under the stimulus of the strong light emitted from the sky at that season.*

* It seems probable that amongst the complicated elements determining the geographical distribution of plants may be the duration of their exposure to direct or diffuse solar light, and the modified and diminished barometric pressure resulting from altitude, with perhaps other scarcely subordinate conditions, dependent on electricity and similar meteorological agencies, not hitherto taken into account. It is alleged that many tropical plants in our stoves suffer from the too long-continued action of light upon their leaves in summer, depriving them of that sleep or repose from functional activity which the invariable alternation of equal day and night ensures to them, in their native climate, for the renewal of their exhausted irritability. Such plants, possessing in their perennial foliage organs permanently excitable, would probably, irrespective of temperature, be as unfit to exist for any length of time in regions exposed to long-protracted daylight at one period of the year as to tolerate the deprivation of its absence for the same space of time at another season. In northern latitudes the cold of winter compensates for the continued stimulus of light through the long days of summer by the torpor and suspension of the circulation it induces in plants, whose respiratory functions have been previously arrested by the natural decay of the leaves, from constant excitement during the season of vegetable activity.

Even between the tropics, certain trees, having leaves analogous in their thin transpirable texture to those of species inhabiting the temperate zone, pass a short period of the year in repose, and are as truly deciduous as any of colder countries; but, since the stimulus of light is withdrawn, in the former case, for many hours out of the twenty-four, at all seasons alike, a shorter cessation of the vegetable functions suffices to restore impaired irritability than in the latter, where the excitement is kept up, with but partial or imperfect remissions, for weeks or months together. In countries verging upon or within the arctic circle this continuous action of light augments in an increasing ratio of intensity and duration with the latitude attained, and so makes up, by its stimulating power on vegetation, for the low mean temperature which (contrary to popular belief), marks the short-lived summer of such high latitudes. For it is certainly a great though very prevalent error to suppose that the summers of high northern latitudes, though short, are hot: all meteorological tables prove the contrary, it being a fact that the mean temperature of the year, and of each month in it, diminishes from the equator to the pole (local causes of deviation from the general law excepted) by a decrement capable of exact calculation, but varying betwixt certain parallels, and greatest about the middle latitudes.

It is true, as Humboldt long ago observed, that the mean temperature of summer diminishes less rapidly than that of winter in receding from the equator; but so far is the temperature of the former season from increasing towards the arctic parallels, that the prolonged presence of the sun above the horizon cannot compensate for his lower altitude and consequent obliquity of his rays sufficiently to maintain a mean summer heat equal to, much less surpassing, that of any latitude farther from the pole than the one assumed to

prove the contrary position. No person in the least acquainted with meteorological science will assert that the summer of St. Petersburg is hotter than that of Paris, or even so warm; or that the same season at Paris exceeds in heat, whilst it lasts, that of Rome, Madrid, or other cities of Southern Europe, which, if the before-mentioned theory were correct, it ought assuredly to do. I am inclined to attribute this popular fallacy respecting the summer of northern latitudes to the effect upon the frame of a really moderate but occasionally high temperature, sustained through days of almost wearisome length, alternating with nights so short and lucid as to invite rather to active exertion from their comparative coolness, than to that quiet and repose which we instinctively seek and are most fitted to enjoy during the temporary absence of light that attends the earth's diurnal revolutions in regions nearer the equator. In these high parallels the air has no time to cool considerably, or darkness to overspread the face of Nature, before the sun again emerges above the horizon to dispel the faint approaches of obscurity, and renew the little heat already lost by terrestrial radiation. The system is excited by the unremitting stimulus of two powerful agents, whereby an impression is conveyed to the feelings, of a degree of heat, which the thermometer, if consulted, would show they had greatly exaggerated. The human body is here under circumstances of excitement, from the continuous, rather than the intense, action of colour and light, the effect of the joint agency of which on plants is to hasten their progress to maturity, as soon as, or even sooner than, either could accomplish that end by an augmented but less constantly sustained force.

FLORA VECTENSIS.

I. VASCULAR OR PHANEROGAMOUS PLANTS.

Vegetables composed of cellular tissue, woody fibre, and spiral vessels; bearing distinct organs of reproduction (stamens and pistils), and producing seeds having an embryo furnished with one or more cotyledons.

CLASS I.

DICOTYLEDONOUS OR EXOGENOUS PLANTS.

Stems formed of bark, wood and pith, the wood traversed by medullary rays, and increasing in perennial plants by annual additions of concentric layers external to the older zones or betwixt them and the bark. Leaves with anastomosing veins. Cotyledons 2 or more, opposite or whorled.

Subclass I. ANGIOSPERMÆ.

Ovules produced within a closed ovary or pericarpial envelope. Cotyledons 2, very rarely (in *Cuscuta*) 0, opposite.

Subdivision I. THALAMIFLORÆ, *DC.*

Stamens hypogynous or not adherent with either of the floral envelopes, but springing, like them, from the receptacle or *bed* (*thalamus*) bearing the ovaries, and close underneath the latter.

Order I. RANUNCULACEÆ, *Juss.*

Herbaceous or occasionally shrubby and climbing plants, mostly with acrid watery juices and variously compound or divided seldom entire leaves, whose petioles are dilated and sheathing at the base and without (true) stipules. *Perianth* regular or irregular. *Sepals* 3—5 or more, often coloured and petaloid, or frequently unsymmetrical, mostly deciduous. *Petals* 5—10 or more, either regular and often furnished with a pore or scale at the base, or

unsymmetrical (hooded, spurred or tubular), sometimes wanting, minute or partly deficient by abortion. *Stamens* commonly numerous and indefinite, rarely few and definite (5—10); anthers adnate mostly extrorse. *Ovules* anatropous. *Fruit* consisting either of many dry indehiscent 1-seeded carpels arranged on a receptacle, or of several (3—5 or more) few- or many-seeded dehiscent capsules (follicles); more rarely united succulent or baccate. *Seeds* erect or pendulous; embryo minute in the base of the firm albumen.

Tribe I. *Clematideæ*.

Æstivation valvate or induplicate. *Petals* 0 or imperfect and stamen-like, (*Gray*). *Carpels* numerous, 1-seeded, tailed with the feathery or silky persistent style. *Seeds* pendulous. *Leaves* opposite. *Stems* mostly shrubby and climbing.

I. CLEMATIS, *Linn.* Virgin's Bower.

Sepals 4 (rarely more), coloured. *Petals* 0. *Carpels* indehiscent, tailed.

Ornamental but acrid perennials, native to the warmer parts of the temperate zone in all quarters of the globe, erect or climbing, more or less shrubby, rarely herbaceous, with variously decomposed, ternate or pinnate, sometimes simple leaves, and solitary or paniced, perfect or subdioicous, white, blue or purple flowers, that are sometimes fragrant.

1. *C. Vitalba*, L. *Common Virgin's Bower. Traveller's Joy. Old Man's Beard.*—Bedwine, *Vect.* Stem shrubby climbing, leaves pinnate their petioles twining, leaflets 5—7 mostly cordato-ovate incised serrate 3-lobed or entire, panicles forked shorter than the leaves, flowers perfect. *Br. Fl.* p. 4. *E. B.* t. 612.

In woods, hedges and thickets, abundantly. *Fl.* July—September. *Fr.* October, November. *h.*

E. Med.—Frequent about Ryde, in Quarr copse, lane between Binstead church and the Newport road; old stone-pits at Binstead, near Stonelands, &c. In profusion all over East End, and throughout the Undercliff. Hedges on Ashley Down and about Brading.

W. Med.—About Cowes, Yarmouth, Newport, Carisbrook, Westover, Newbridge, and wherever the soil is calcareous, occurring in the greatest plenty.

Stem very woody, long and twisted, often exceeding the thickness of the wrist at its origin, climbing over trees and bushes, or hanging from rocks and walls. *Leaves* opposite, deciduous, imparipinnate. *Leaflets* large, bi- or more rarely trijugate, distant, stalked, ovate or cordato-ovate, firm and coriaceous, glabrous, except when young, more or less waved and twisted, submucronato-acuminate, their points deflexed or revolute, reticulato-venose, with 5 strong nerves beneath. *Stipules* none. *Petioles* angular, flexuose, both the common and partial ones often acting as tendrils or clasping. *Flowers* greenish white or somewhat cream-coloured, slightly scented, but scarcely deserving of being called fragrant, in axillary and terminal, often leafy, trichotomously branched paniculate clusters, shorter than the leaves, and of which the lateral ones are on long, naked, straight, opposite, nearly erect peduncles, which are swollen at the base. *Bracts* in pairs about the middle or towards the base of the pedicels, and subtending the forks of the clusters, the former small, lanceolate, entire, the latter leafy, lobed or

pinnate. *Sepals* oblong, bluntish, obscurely 3-nerved, villous on both sides, most so beneath, a little longer than the stamens, leathery, at length strongly deflexed and revolute. *Stamens* numerous, at first erect then spreading, their filaments flattened, greenish white, slightly dilated upwards, anthers of 2 linear oblong decurrent lobes, whitish. *Germens* small, roundish, on a villous receptacle. *Styles* numerous, the length of the stamens, greenish, hairy, erect with spreading tips. *Carpels* ovoid elliptical, compressed, pubescent, reddish brown, with long feathery mostly deflexed and incurved awns about an inch or an inch and a half in length.

Called Old Man's Beard in many parts of England, from the hoary aspect of the long feathery awns of the seed, which remain attached to the plant throughout the winter, and contribute to enliven the leafless hedges at that dreary season. In the absence of trees to cling to, I have seen it running down the steep sides of chalk-pits, like long ropes, which its twisted fibrous stems greatly resemble. The slender flexile branches serve occasionally for binding faggots, and as a substitute for the more costly pipe or cigar to our young rustic smokers.

The North-American *C. Virginiana*, sometimes seen in our gardens, and greatly resembling this species, has ternate leaves, diœcious flowers, and a less woody texture.

I found some years ago the sweet-scented *Clematis* of our gardens (*C. Flammula*, Linn., var. *maritima*), with very narrow leaflets, on the loose sandy beach at Norton, by Yarmouth, where it appeared quite naturalized, though sparingly, in a situation analogous to that in which I have gathered the typical form in the S. of France, where the plant is mostly a trailing, not a climbing, one.

C. cirrhosa, a Spanish species which Gerarde alleges to have been found by himself in this island, is not likely ever to have occurred here.

Tribe II. *Anemoneæ*.

Estivation imbricate. *Petals* 5—15 without a nectariferous pore, more commonly 0 or abortive. *Carpels* several or numerous, 1-seeded, indehiscent, either tailed or merely pointed or mucronate. *Seed* pendulous. Herbaceous, never shrubby or climbing. *Leaves* radical or alternate, cauline often opposite or whorled and forming an involucre.

II. THALICTRUM, Linn. Meadow Rue.

Calyx of 4—5 sepals. *Petals* 0. *Carpels* indehiscent, grooved ribbed or inflated, sometimes stipitate. *Seed* pendulous. Name of unknown or uncertain derivation.

Somewhat acrid and fœtid perennials with bi-triternately decompounded leaves, the divisions and the mostly 3-lobed leaflets stalked. Flowers panicled or corymbose, white, greenish or yellowish, often diœcious or polygamous. Mostly native to the colder parts of Europe, Asia and America.

The Meadow Rues approach certain species of *Clematis* in their flowers (*C. erecta* and *C. integrifolia*) and habit, whilst they resemble *Aquilegia* in their ternately compounded leaves, and trifidly lobed leaflets.

1. *T. flavum*, L. *Common Meadow Rue*. "Stem erect branched furrowed, leaves bipinnate, leaflets broadly obovate or wedge-shaped trifid, panicle compact subcorymbose, flowers erect."—*Br. Fl.* p. 5. *E. B. t.* 367.

In wet meadows, along ditches and banks of rivers; extremely rare. *Fl.* June, July. 24.

E. Med.—In wet pasture ground on the N. shore of the Wootton river at its mouth; very sparingly.

"Stem 2-3 ft. high. Flowers very numerous, yellow. Lobes of the leaves varying in breadth."—*Brit. Fl.*

III. ANEMONE, *Linn.* *Anemone*.

Involucre of 2-3 divided leaves usually remote from the flower. *Sepals* petaloid 5-15 seldom 20. *Petals* 0. *Carpels* with or without tails, on a thickened hemispherical or conical receptacle.

Early flowering herbaceous perennials with elegant white, red, yellow, blue or purple blossoms, natives of temperate and cold, mostly inland countries, or on high mountains of warmer regions over the greater part of the northern hemisphere. Leaves mostly radical, those of the stem 2-3 together forming an involucre at the base of the peduncles. The genus is intimately allied to *Clematis* in character, but in habit to *Ranunculus*, with the acrimony of both.

1. *A. nemorosa*, L. *Wood Anemone*. Leaves radical and involucreal similar ternate petiolate, leaflets stalked bi- and tripartite, the segments oblong acutely cut and lobed subtrifid, stem single-flowered, leaflets of the perianth mostly 6 oblong or elliptical obtuse, pericarps downy awnless. *Br. Fl.* p. 6. *E. B.* t. 355.

In thickets, groves, and moist shady pastures, abundantly. *Fl.* March-May.

E. Med.—Common everywhere about Ryde, around St. John's, in Apley wood, Quarr copse, &c. Plentiful on sandy soil in Bordwood or Borthwood forest.

Va r. . Flowers pinkish purple. About America.

Root creeping horizontally, about the thickness of a quill, fleshy and brittle. *Radical leaves* one or two, sometimes wanting, on long, slightly hairy, grooved petioles, ternate or subquinate, their leaflets stalked, the two lateral mostly bipartite with trifid segments, the middle leaflet simply trifid, all the segments ovate or wedge-shaped, acutely inciso-serrate, subtrifid, ciliated and slightly hairy on both sides. *Stem* solitary, or sometimes two from the same root, taller than the leaves, from about 8 to 12 inches high, erect, slightly angular, terminated by the triphyllous *involucre*, the leaflets of which are similar to the radical ones, but with segments in general narrower and more acutely cut, their petioles much dilated. *Flowers* solitary, an inch or more in diameter, white or tinged with light purple externally, often almost wholly of that colour or of a deep rose-red, sometimes it is said blue, a little drooping. *Peduncle* springing from the axis of the stem, suberect, downy, about as long as the involucre. *Leaflets* of the *perianth* 5 to 8, rarely more, most commonly but 6, oblongo-elliptical, very obtuse, unequal, veiny, thin and weak, glabrous, at first connivent, finally spreading. *Stamens* numerous, much shorter than the perianth, spreading; *anthers* bright yellow, roundish ovate, compressed. *Ovaries* erect, greenish, silky and striated. *Stigmas* simple. *Pericarps* in small roundish heads, very hairy, with nearly straight tapering beaks, awnless.

The *Wood Anemone* is the most generally diffused of the very few species found in Britain of this eminently continental genus, of which Sweden alone can boast no less than seven (including *Hepatica* and *Pulsatilla*), whilst it is doubtful whether more than two are really indigenous to this country. The present species is found throughout Britain and in all parts of Europe from Italy to Lapland. It also inhabits Siberia, and a slight variety is common in the United States and Canada. The plant being extremely gregarious, it is a great ornament to our woods in early spring, when the but yet half-clothed soil is spangled with the profusion of its starry blossoms. The variety with deep rose-red or purple flowers is not very uncommon in our sandy districts.

Mr. Henry Turner, of the Botanic Garden, Bury St. Edmund's, has remarked a high degree of fragrance in the flowers of the Wood Anemone, and my friend [the late] E. J. Vernon, Esq., has proved to me that the blossoms emit a delicate almond scent, as in some kinds of Clematis.

IV. ADONIS, Linn. Pheasant's-eye.

Sepals 5. *Petals* 5—15 without a nectary. *Carpels* without tails, hooked or acuminate. The Flos Adonis or Adonidis of the old herbalists, from an idea of its being the flower fabled to have sprung from the blood of Adonis.

A small genus, the red or scarlet-flowered species of which are annual, the yellow perennial; the former inhabiting chiefly the cornfields of southern and central Europe and North of Africa, the latter the hilly and colder tracts of Europe and Asia. Though commonly placed in this tribe, Adonis is decidedly more closely allied to Ranunculus than to Anemone, differing from the former mainly in the want of nectaries on the petals, and from the latter by the absence of an involucre.

1. *A. autumnalis*, L. *Corn Pheasant's-eye*. "Petals concave connivent scarcely longer than the glabrous calyx, achenes reticulated collected into an ovate head, stem branched."—*Br. Fl.* p. 6. *E. B.* t. 308.

In cornfields, but rarely. *Fl.* May—October. ☉.

E. Med.—In cornfields above Steephill towards St. Lawrence, *Dr. Martin*, where I gathered very fine and abundant specimens June 11th, 1839. I have since found it at Bonchurch.

W. Med.—Cornfields on the late enclosures of Parkhurst forest at Hill Cross farm. Not uncommon in various parts of the island, *George Kirkpatrick, Esq.*

Root tapering, whitish. *Stem* 6—12 inches high, round, furrowed, simple, or in the larger plants branched, downy at the base and springing of the petioles, otherwise glabrous. *Leaves* alternate, the lower ones on hairy footstalks, upper ones sessile, tripinnatifid, the segments linear, acute, smooth. *Flowers* mostly solitary, terminal, about the size of a sixpence, deep rich scarlet, very fugacious. *Petals* obovate, deciduous, minutely notched, with dark purple claws. *Sepals* 5, ovate, purplish, scarcely shorter than the petals. *Anthers* in 2 rows, broad and flat, of two brownish lobes bursting along their outer edges. *Ovaria* greenish. *Stigmas* violet. *Carpels* collected into an ovate head, 4-sided, ovate, tapering, indehiscent, single-seeded.

The flowers when the plant has been for some time dried for the herbarium lose their fine scarlet colour, becoming white and diaphanous like goldbeater's skin.

Tribe III. Ranunculeæ.

Estivation imbricate. *Perianth* double. *Petals* with a nectariferous hollow or pore at their base. *Carpels* numerous, 1-seeded, indehiscent or partially bursting, without tails, often tuberculate, mucronate or muricate. *Seed* erect, or in *Myosurus* pendulous and inverted.

V. RANUNCULUS, Linn. Crowfoot.

Calyx of 5 (rarely 3) sepals. *Petals* 5, seldom 10, 12 or more, occasionally imperfect or obsolete, the pore or nectary at their base within naked or covered with a scale. *Stamens* sometimes

few, mostly numerous. *Carpels* many, indefinite, indehiscent, without tails, collected into a globular or elliptical head.

Annual or perennial herbs, never shrubs, with alternate, entire, toothed or multifid leaves, and yellow or white, usually conspicuous flowers on peduncles terminal, axillary or opposite the leaves. Natives of cold temperate and alpine regions throughout the globe. Most of the species are extremely acrid but scarcely poisonous in the strict sense of the word.

* *Carpels transversely wrinkled. Petals white.*

1. *R. aquatilis*, L. *Water Crowfoot*. "Stem submersed, leaves capillaceo-multifid, floating ones tripartite their lobes cut, petals obovate longer than the calyx, stamens 5—10, pericarps glabrous."—*Br. Fl.* p. 7. *E. B.* t. 101.

Var. . "All the leaves capillaceo-multifid."—*Br. Fl.* *R. pantothrix*, DC. *Bertol. Fl. Ital.* v. p. 575.

Var. γ. "Leaves all submersed flat roundish, capillaceo-multifid, their segments all spreading in the same plane."—*Brit. Fl.* *R. circinatus*, Sm. *E. Fl.* vol. iii. p. 55. *R. circinatus*, Sibth. *E. B. Suppl.* t. 2869; *Fl. Dan.* xiii. t. 2236. Fine-trimmed water Crowfoot, *Pet. Fl. Brit.* tab. xxxix. fig. 3 (bona).

In ditches and ponds, common. *Fl.* April. 24.

E. Med.—About Sandown, and ditches in Sandown Level, which it covers with a mantle of the purest white. Ditches about Brading.

β. In a pool on the south side of Cothey Bottom copse between Westbridge and Barnsley farm, 1848. This is exactly the *R. pantothrix* of Bertoloni, *Fl. Ital.* v. p. 575. Pool near the Priory. Small pool in a field near Summerford farm, 1837. As the plant here grew in a very confined quantity of standing water, it is clear that the finely divided form of the leaf could not have been occasioned by any current to which it was exposed.

γ. Ditches about Brading Harbour. In a ditch on Brading marshes, plentifully. This var., if such only it really be, constitutes a separate species with most of the German botanists, and is principally distinguished by having the leaves finely divided in a ternary arrangement into capillary segments, spreading, with a flat-tish circular outline, and with such a degree of rigidity as not to collapse into a pencil of hairs when removed from the water, as does *R. fluvialis* of Sibth. and others. Whether the remaining distinctions given by continental authors are conclusive of its right to rank as a species seems very doubtful, and in a local Flora the discussion would be out of place where certainty could not be thereby established. It is certainly a most remarkable variety; the whole plant assumes in the water the same circinate disposition as the leaves, whose capillary segments have an unusual degree of stiffness, and seem to become coated with earthy particles in the same way as those of *Chara*, though less extensively.

2. *R. hederaceus*, L. *Ivy Crowfoot*. "Stem submersed and throwing out roots or creeping, leaves roundish kidney-shaped with 3—5 rounded entire lobes, petals (small) narrow scarcely longer than the calyx or sometimes twice as long, stamens 5—12, receptacle of fruit glabrous."—*Br. Fl.* p. 8. *E. B.* t. 2003.

In similar places with the last, but less frequent. *Fl.* April. 24.

E. Med.—In a plashy spot not far from Fivens. In a ditch or drain between Lee and Blackpan, very abundantly. Apse Heath pond. Close to Shambler's farm, E. Cowes. [Brook near the Ferry, Bembridge, *Dr. Bell-Salter*, Edrs.]

W. Med.—In a drain or ditch on a moor near Blackwater mill. Very abundantly along the road from W. Cowes to Newport in the little rill or drain at the foot of the hedge a little beyond Dallimore's Gate (turnpike), for two or three hundred yards at intervals. In a pond at Northwood park close by Little Egypt, *Miss G. E. Kilderbee*. Near Place farm, W. Cowes, and in the driftway from

Dothin's farm to Limekiln Cliff; also in a pool at the east end of the driftway in great abundance, *Miss G. E. Kilderbee*. Apparently frequent in splashes and pools on the green (?) sand of the south-western part of the island, as at Hoxall, Brook green, Chilton green, &c.

** *Carpels not transversely wrinkled. Nectary with a small scale. Flowers yellow.*

§ *Leaves undivided.*

3. *R. Lingua*, L. *Great Spear-wort*. "Leaves lanceolate subserrated sessile semi-amplexicaul, stem erect glabrous, achenes minutely pitted with a broad ensiform beak."—*Br. Fl.* p. 9. *E. B. t.* 100.

In and about shallow pools, ditches and marshy places, but rarely. *Fl.* July, August. 24.

E. Med.—In the grounds at Fernhill, in a ditch or stream, *Miss Sophia Sanders*.

W. Med.—Tolerably frequent in several parts of the marsh at Easton.

Resembles the next species, but is much larger, with far more conspicuous flowers. *Root* a dense mass of matted fibres, and creeping with long, white, jointed runners. *Stem* erect, 2—3 feet high, branching above, round, hollow, leafy, and rooting from the short, bright-red joints of its submerged base. *Leaves* linear-lanceolate, erect, clasping the stem, thick, smooth or sometimes slightly hairy beneath, their edges with distant very shallow serratures. *Peduncles* single-flowered, clothed with appressed hairs. *Flowers* an inch or more across, handsome, bright yellow. *Sepals* ovate, concave, ribbed and hairy. *Petals* broad, rounded, quite entire, varnished, with a wide fleshy scale just above the very short claw, forming a sac or pouch, partly filled with a nectareous fluid. *Stamens* very numerous; *anthers* striated, bursting at the back. *Germens* numerous, sessile; *receptacle* with a few stout bristles, not always present. *Carpels* collected into small globular heads, ovate, punctato-striate, much compressed, suddenly tapered into a short, thick, slightly curved beak.

The earlier, primordial, submerged leaves are very large, ovate-oblong, obtuse, cordate at the base, slightly undulate-crenate along their margins, more or less beset and most so beneath with short rigid pubescence, or nearly glabrous, on very long, semiterete, somewhat hairy, sheathing petioles, obscurely and reticulately veined, remaining green through the winter.

The petals of *R. Lingua* are subject to a species of distortion or imperfection of development, shown in deep marginal notches and other irregularities, obvious not only in the freshly expanded blossoms, but even in the buds themselves.

4. *R. Flammula*, L. *Lesser Spear-wort*. "Leaves linear-lanceolate nearly entire petiolate, the lower ones ovato-lanceolate, stem decumbent at the base and rooting, achenes minutely pitted or smooth with a short or sometimes subulate point."—*Br. Fl.* p. 9. *E. B. t.* 387.

Common everywhere in wet marshy situations and in damp pastures. *Fl.* July—September. 24.

5. *R. Ficaria*, L. *Pilewort. Lesser Celandine*. "Leaves cordate petiolate angular or crenate, sepals 3, petals 9, achenes smooth blunt."—*Br. Fl.* p. 9. *E. B. t.* 584. *Ficaria ranunculoides*, DC.

In woods, meadows and pastures, on hedge-banks and in wet places, abundantly. *Fl.* March—May. 24.

A perfectly smooth and somewhat succulent herb, whose bright yellow flowers are amongst the earliest heralds of returning spring. *Root* a bundle of whitish

branching fibres, interspersed with oblong-ovate, elliptical, or pear-shaped, fleshy and juicy tubers, said by Smith to be annual, though the root itself is perennial. *Stems* one or more, leafy, erect or decumbent and spreading, their extremities upright, not much branched, from a few inches to a span long, weak, hollow and succulent, sometimes it is said bearing similar tubers to those at the root, in the axils of the leafstalks. *Leaves* resembling those of *Caltha* or some kinds of *Cyclamen*, but smaller, 1 or 2 inches long, roundish heart-shaped or cordato-reniform, obtuse, the lowermost obscurely angulato-crenate or waved, those higher up sometimes distinctly angular or even lobed, often with a row of distant, pale, glandular dots along the margin, mostly variegated with paler spots, and frequently blotched with purplish black in the centre, beneath without spots, venoso-reticulate, shining. *Radical leaves* fascicled, on very long, hollow, grooved petioles, expanding into broad, white, sheathing bases, those of the stem opposite or alternate, on stalks becoming shorter as they ascend. *Flowers* solitary, on very long terminal angular and furrowed peduncles, an inch or more in diameter, closing before night and in rainy weather. *Sepals* 3, seldom 5, deciduous, roundish ovate, concave, membranaceous, many-ribbed, streaked or clouded, greenish, with a short fold-like appendage at their base, their margins narrow, whitish or yellowish. *Petals* 8—12, mostly 8 or 9, very much larger than the calyx, ovate-oblong or elliptical, varying in breadth, obtuse, plane, and quite entire, bright golden yellow and highly varnished, becoming bleached by age and light, their lower part with the appearance of having been greased or wetted, from the absence of the opaque colouring giving a degree of translucency to that portion of the petal, venoso-striate, more or less tinged with green or brown at the back, each with a nectariferous pore, just above its insertion guarded by an erect, concave, slightly notched, brownish scale. *Stamens* numerous, bright yellow; *anthers* erect, bursting along their outer edges (extrorse), elliptical, flat. *Styles* obsolete; *stigmas* sessile, ovate-orbicular, bristly, 2-lobed.

§§ *Leaves divided, lobed or cut.*

6. *R. auricomus*, L. *Wood Crowfoot*. *Sweet Crowfoot*. *Goldilocks*. "Leaves glabrous, radical ones reniform 3-partite and cut, stem-leaves divided to the base into linear subdentate segments, calyx pubescent shorter than the petals, head of fruit globose, achenes downy."—*Br. Fl.* p. 10. *E. B.* t. 624.

On moist shady banks, in groves and thickets, but not very commonly. *Fl.* April, May. 24.

E. Med.—About the grounds at St. John's, sparingly, and in Apley wood. Wood by Little Smallbrook farm. Inwards copse by Ashby farm. Wood between Wootton church and Whippingham. In a copse called Steepworth, a little east of Kerne. Sparingly in Quarr copse. Grounds of Northfield House, Ryde, and wood between Knighton House and Kerne, *Dr. T. Bell-Salter*. Marina wood by Apley, abundantly. Munwell warren, *Dr. T. B. Salter*.

W. Med.—In Lorden, Westridge and Slucombe coppices near Shorwell, but sparingly. New Barn Hummit, Calbourne, also Kingston copse, plentiful.

Root abrupt, emitting a tuft of copious, whitish, cylindrical fibres. *Stems* one or more, a foot high at most, usually shorter, rounded, hollow, a little branched, erect or somewhat spreading or reclining, glabrous or slightly downy on the upper part. *Radical leaves* several, on long, channelled, downy stalks, with white sheathing bases, roundish or reniform, more or less hairy, variously and deeply divided into 3 or 5, lobed and cut wedge-shaped segments. *Stem-leaves* quite sessile, cleft to the very base, with about 5—7 linear pointed segments which on the uppermost leaf are entire or nearly so, on the rest again forked, cleft or toothed. *Flowers* solitary, terminal, on long downy pedicels, when perfect rich golden yellow, but the petals in the earlier blossoms are commonly but partially developed or altogether wanting, the calyx in such cases assuming in some degree their form and colour on the edges, but in this imperfect state the sepals usually

remain greenish at the back, otherwise when fully evolved nearly uniform, yellow, concave, obtuse, ribbed and hairy, not reflexed, shorter than the roundish, entire, veined, bright yellow, and shining petals, the tubular pore at the base of which is not closed by a scale. *Stamens* numerous; *anthers* erect, elliptical, linear, bright yellow. *Stigmas* recurved. *Carpels* in small round heads, ovate, slightly hairy, keeled, with a tapering hooked beak.

This plant has none of the acrimony of the other Crowfoots, hence its name of Sweet Crowfoot.

7. *R. sceleratus*,* L. *Marsh Crowfoot. Celery-leaved Crowfoot.* "Leaves glabrous, radical ones petiolate tripartite, lobes cut very obtuse, upper ones in 3 linear cut segments, calyx glabrous, achenes slightly wrinkled collected into an oblong head, receptacle hairy."—*Br. Fl.* p. 10. *E. B.* t. 681.

About pools and ditches, in wet meadows and other watery places; not very frequent. *Fl.* May—October. ☉.

E. Med.—By the pond at Hardingshute farm, and on the Dover, sparingly. By Thorley farm. Ditches in meadows at the bottom of Brading harbour, *Wm. Wilson Saunders, Esq.* Plentiful in a wet meadow at Yarbridge. About Sandown. [*Lane End, Bembridge, A. G. More, Esq., Edrs.*]

W. Med.—Marsh ditches at Freshwater gate, and meadows between Yarmouth and Thorley.

An acrid succulent herb, from a few inches to upwards of 2 feet in height. *Root* a bundle of white fibres. *Stem* erect, stout, soft, hollow, furrowed and angular, copiously alternately and repeatedly branched, smooth and roundish below, its upper part and the branches thickly clothed with fine downy hairs, often I believe wanting. *Root-leaves* large, on very long stalks, roundish reniform, 3-lobed, the lobes trifid or variously cut and cleft with obtuse segments. *Stem-leaves* on shorter stalks, the highest of all sessile, deeply 3-cleft, with narrower segments, those of the uppermost leaves almost linear, nearly entire, and a little hairy. *Petioles* with short stipular sheaths. *Flowers* very small for so large a plant, scarcely one-third of an inch in diameter, palish yellow, on solitary grooved peduncles, either terminal, axillary or opposite to the leaves, much lengthened out in seed. *Sepals* ovate, coloured, concave, very hairy without, strongly reflexed. *Petals* obovate, glossy, flat, with a large, prominent, rather cupped than tubular pore or nectary. *Germens* very numerous, on a hairy receptacle. *Stigmas* very small, short, sessile. *Carpels* in an ovate or oblong head.

Easily known by its erect, much-branched stem, very small pale flowers, and conical heads of ovaria, in this last respect resembling *Myosurus minimus*.

8. *R. acris*, L. *Upright Meadow Crowfoot.* "Calyx spreading, peduncles rounded (not furrowed), leaves tripartite their segments acute trifid and cut, upper ones linear, achenes and receptacles glabrous."—*Br. Fl.* p. 10. *E. B.* t. 652.

Very common in moist woods, meadows, pastures and by roadsides. *Fl.* June, July. ♀.

9. *R. repens*, L. *Creeping Crowfoot.* "Calyx spreading, flower-stalks furrowed, scions creeping, leaves with 3 petiolated leaflets which are 3-lobed or 3-partite and cut, achenes collected into a globose head glabrous, receptacle hairy."—*Br. Fl.* p. 10. *E. B.* t. 516.

Over the entire Isle of Wight. *Fl.* May—August. ♀.

* The trivial name here denotes the mischievous properties of this very acrid plant.

10. *R. bulbosus*, L. *Bulbous Crowfoot*. "Calyx hairy reflexed, peduncles furrowed, stem upright many-flowered, leaves cut into 3 petiolate leaflets which are 3-lobed or 3-partite and cut, root bulbous, achenes smooth, receptacle hairy."—*Br. Fl.* p. 10. *E. B. t.* 515.

In meadows, pastures and waste ground everywhere. *Fl.* May, June. 24.

"Stem 1 ft. high, hairy. Lobes of the lower leaves subovate; upper leaves with linear segments."—*Br. Fl.*

One or both of this and the preceding species are known in the Isle of Wight by the name of *Yellow Caul*.

*** *Carpels rugose, tuberculate, or muricate. Root annual.*

11. *R. hirsutus*, Curt. *Pale hairy Crowfoot*. "Calyx reflexed, stem erect many-flowered hairy, leaves 3-lobed or 3-partite, lobes obtuse cut, root fibrous, achenes margined and tuberculated near the margin."—*Br. Fl.* p. 10. *E. B. t.* 1504. *R. Philonotis*, Ehrh.

In waste and cultivated ground, cornfields, &c. *Fl.* June—September. ☉.

E. Med.—On the Dover, Ryde. Fields above E. Cowes, plentiful. [Tolerably common near Bembridge, *A. G. More, Esq.*, Edrs.]

12. *R. parviflorus*, L. *Small-flowered Crowfoot*. "Stem spreading, leaves hairy 3-lobed and cut, peduncles opposite the leaves, calyx as long as the petals, achenes muricated."—*Br. Fl.* p. 11. *E. B. t.* 120.

On dry banks and in pastures, cornfields, and waste ground in various places. *Fl.* April—August. ☉.

E. Med.—Abundant on an earthen fence along the road to Brading from the turning off eastward by the finger-post on Ashey down to a considerable distance on the road. In a field above Shanklin Chine on its S. side, plentifully. Near Apse farm. On the steps in the little orchard by the 'Crab and Lobster' at Ventnor. Near Godshill and Brading. At St. Helen's by the descent to the Spit, abundantly. Near Osborne or Newbarn farm, E. Cowes, also plentifully. The Rope-walk, E. Cowes, *Miss Kilderbee*. Near Wootton church, *Miss S. Sanders*. Frequent in fields about Steephill, *A. Hamborough, Esq.*

W. Med.—In great abundance on sandy hedgebanks by the way from Brixton to Grange. Abundant on the chalk-marl at the south foot of Motteston down. Frequent about Brixton, on the sand, and indeed over the whole of the south-western part of the island on that formation. Tapnel farm, *Mrs. Penfold*. Fresh-water by the cliffs, *Mr. D. Turner*, (*Mr. Snooke*).

Root annual, whitish and fibrous. *Stems* numerous, branched and prostrate, spreading in a circular form, from a few inches to a span long, round, hollow, and clothed like the rest of the plant with a copious erect pubescence. *Leaves* on long peduncles that are grooved above, those of the root round, deeply 5-lobed, the lobes sharply cut and notched, uppermost leaves 3-lobed, with very acute and more distant segments. *Flowers* solitary, opposite the leaves, very small and inconspicuous, their peduncles elongated after flowering. *Sepals* deciduous, as are the petals, greenish, hairy. *Petals* as long as the calyx, narrow, ovate, pale yellow, naturally 5 but 1 or 2 often wanting or imperfect even in the bud, each with a prominent scale towards the claw; *anthers* 5—8. *Pericarps* ovate, strongly keeled, with a short curved beak, their sides thickly covered with hooked prickles pointing upwards.

This species of *Ranunculus* is chiefly confined to the temperate, maritime, and western parts of Europe. It is common on the opposite coast at Southampton and Lymington.

13. *R. arvensis*, L. *Corn Crowfoot*. Vect. *Devil's Claws*. "Calyx spreading, stem erect many-flowered, leaves 3-cleft their lobes generally again 3-cleft into linear entire or bi-tridentate segments, achenes margined muricated."—*Br. Fl.* p. 10. *E. B.* t. 135.

In arable land, amongst corn, &c., far too prevalent. *Fl.* May—July. *Fr.* July, August. ☉.

E. Med.—About Ryde, common. Fields above E. Cowes, and various parts of that neighbourhood. Cornfield by Preston farm.

W. Med.—Cornfields between Yarmouth and Shalfleet. Common about Newport, Gatcombe, Freshwater, and most other places.

Root consisting of many tapering, simple or somewhat branched fibres. *Stem* solitary, or in luxuriant plants several, erect, from 8—10 or 20 inches high, terete or obscurely angular, leafy, hollow in the centre, waved, paniculately dichotomous, the branches more or less erect or patent, and together with the entire upper part of the stem sparsely pubescent, the lower part of the stem glabrous or nearly so. *Leaves* alternate, suberect, those at the base and inferior part of the stem on moderately short footstalks, which rapidly shorten in the succeeding leaves into their short clasping bases, or becoming nearly sessile; *root-leaves* one or two, small, soon withering, the primary ones simple, cuneate, ovate or oblong, 3- or 5-cleft at summit or trifid, the segments entire or toothed; the *rest* ternately pinnatisected, the primary segments remote, stalked and again cut into oblong or wedge-shaped, deeply cleft lobes, the terminal segment for the most part regularly trifid, the lateral pair less so. *Lobes* unequal, attenuated downwards, confluent but not stalked, bifid or trifid. *Petioles* semiterete, glabrous or a little hairy, channelled above, dilated and clasping at base, with membranous ciliated edges. *Peduncles* solitary, opposite the leaves, axillary or terminal, single-flowered, lax and somewhat drooping in flower, firmer and widely spreading in fruit, roughish with ascending pubescence, as long as or longer than the leaves. *Flowers* small, about half an inch or less across. *Calyx* about two-thirds the length of the petals, caducous. *Sepals* spreading, obovate-oblong, faintly 3-nerved, with pale, flattish, dilated margins. *Petals* lemon-yellow, not much spreading, obovate, very entire, venoso-striate, a little shining within, furnished almost at the very point of the claw with a large and broad scale (nectary, *Sm.*) of a roundish obcordate or fan-shaped figure, covering a glandular pore. *Stamens* not numerous, a little incurved; *anthers* linear-elliptical, shorter than the filaments; *pollen* large, spherical, pale yellow. *Carpels* few (about 8 or 9), collected into a loose subglobose head, sessile, glabrous, semiorbicular, much compressed, muricated laterally with conical tubercular aculei hooked at the apex, the marginal row largest and longest, each carpel ending in a straight, conical, compressed beak.

The possession of the acrid and poisonous properties of its tribe in a high degree, in conjunction with the large prickly pericarps, has doubtless obtained for this plant the opprobrious name it bears amongst us of Devil's Claws. It is a most troublesome weed in our cornfields, which it often completely over-runs.

VI. MYOSURUS, Linn. Mouse-tail.

Calyx of 5 sepals produced or spurred at the base. *Petals* 5, with long slender tubular claws. *Carpels* imperfectly dehiscent, closely imbricated, on an elongated subulate receptacle. *Seed* pendulous; embryo inverted, with the radicle superior.

Little annual herbs, of which only two species are known; found in Europe, Asia and America, having quite the habit of *Ranunculus*, but in the spurred calyx, tubular petals and somewhat dehiscent carpels clearly betraying the affinity of *Myosurus* with genera arranged under the succeeding tribe of *Helleborea*.

1. *M. minimus*, L. *Common Mouse-tail*. Ovaries extremely numerous on the conical finally linear-elongate receptacle, carpels closely imbricate, styles very short persistent erect. *Br. Fl.* p. 6. *E. B.* vii. t. 435.

In cultivated ground, cornfields, pastures and waste places, on a sandy, gravelly or chalky soil; not uncommon. *Fl.* April, May. *Fr.* June. ☉.

E. Med.—In several places about Ryde, as on the Dover occasionally. Cornfields about St. John's, and especially abundant in one immediately at the back of the fruit-garden, and near Preston farm between Ryde and the Priory. Plentiful in a field by the footroad up the hill above E. Cowes, between the new church and Osborne park. About Shanklin in several places, particularly in a field above the Chine, at its upper or inland end. Cornfields about Week and Nettlecombe farms, very frequent. About Godshill, Bridges, &c. Abundant at Bank End near St. Lawrence, in a cornfield between the farm and the preventive-station, *Dr. Martin*.

W. Med.—Sandy fields about Shorwell and Brixton occasionally. Atherfield, *Dr. Martin*.

A humble annual, 2—4 inches high, closely allied to *Ranunculus*. *Root* small, fibrous, emitting numerous simple, single-flowered scapes, mostly taller than the leaves and thickened upwards. *Stem* none. *Leaves* numerous, nearly erect, 1—3 inches long, linear-spathulate, flat above with sheathing bases, entire, fleshy. *Flowers* small, solitary, erect, greenish yellow. *Sepals* deciduous, linear, obtuse, deflexed or spreading, with an acute whitish spur at the base of each beneath its point of insertion. *Petals* ligulate, with very long tubular claws. *Stamens* 5—10; *anthers* erect, oblong, bursting at their outer edges. *Styles* obsolete. *Germens* exceedingly numerous (several hundreds), imbricated, on a very conical receptacle, which elongates as the seed ripens to 2 inches or more, and then bears a striking resemblance to a mouse's tail. *Carpels* closely imbricated, each with a thick, pointed, dorsal keel. *Seed* solitary, ovate or elliptical, compressed, quite smooth and greenish.

This curious little plant is extremely rare in Scotland, and has not been as yet detected in Ireland. In the S. and S.E. of England it is by no means of uncommon occurrence. It is a partial native also of America, where a second species (*M. aristatus*, Benth.) has been detected.

It is a singular feature in the geographical distribution of the Mouse-tail, that though spread over the greater portion of Europe, part of Asia and Africa, it reappears in the heart of the western continent only, many hundred miles from the Atlantic and Pacific coasts, but where it is perfectly indigenous.

Tribe IV. *Helleboreæ*.*

Estivation imbricate. *Fruit* several (rarely but 1), deliscent, mostly many-seeded follicles. *Sepals* [mostly] 5, petaloid. *Petals*† 0, or 5—20, bilabiate, tubular, irregular, nectariferous.

VII. *CALTHA*, Linn. Marsh Marigold.

Sepals 5—9, petaloid. *Petals* 0. *Follicles* 5—10 or more, many-seeded.

Glabrous, succulent, perennial herbs, with bright yellow, sometimes white flowers, growing in wet places in the colder parts of Europe, Asia and America, and in southern Patagonia.

* This tribe includes the most active plants of the order; some genera, as *Aconitum*, are virulent poisons, the rest dangerous or at best suspicious.

† Nectaries of the earlier botanists.

1. *C. palustris*, L. *Common Marsh Marigold*. "Stem erect rooting or creeping, leaves orbiculari-cordate or reniform crenate, calyx-leaves 5—6 oval deciduous."—*Br. Fl.* p. 11. *E. B. t.* 2175.

In wet meadows, swampy thickets, and along boggy streams, but not very generally. *Fl.* March—June. *Fr.* May? June. 24.

E. Med.—Abundant in Horringford withy-bed. Common in moory meadows and wet thickets near Blackpan common, and in a meadow to the westward of Merry Garden farm. Meadow between Nettlestone green and Park farm. Abundant in Centurion's copse. In Brading marshes. Pan moor by Newport. Little boggy wood immediately at the back of the fruit-garden at St. John's, sparingly. In a wet hollow between the foot of Bembridge down and Bembridge farm, and in a wet thicket near the latter. Common in wet meadows and thickets in most parts of the vale of Newchurch. In Long Phillis copse. Near Appuldurcombe park on the way to Sandford. Luccombe, *H. C. Watson, Esq.*

W. Med.—Frequent in low meadows and thickets about Brixton and Shorwell. Herb perfectly glabrous, extremely variable.

Stem erect, ascending or decumbent, from a foot or under to 18 inches high, simple below, sparingly forked above, leafy at the bifurcations only, bluntly angular or subterete, often compressed, faintly furrowed, fistulose, very soft and succulent. *Leaves* smooth, succulent, strongly veined, the radical ones on very long hollow petioles which are flattened above, and dilated at the base into membranous stipular appendages, with brownish ribbed, scariose summits soon withering, those of the stem smaller, alternate, on similar but shorter stalks, clasping the bases of the branches and flower-stalks, the ultimate or highest leaves nearly or quite sessile; all extremely various in size, the root-leaves often very large, mostly cordato-rotundate, and very obtuse, more rarely somewhat pointed and even triangular, the margin acutely, bluntly, or obsoletely crenate-serrate, often entire or slightly waved only, except at the lobes, which are usually notched, the sinus itself entire. *Peduncles* 2, 3 or 4 together, single-flowered, various in length, deeply furrowed and angular. *Flowers* erect, large and handsome, 1½ or 2 inches in diameter, rich golden yellow. *Sepals* about 5—8, obovate-rotundate, entire, unequal, rich golden yellow, in an early state tinged or streaked greenish at the back, without distinct claws or any pore at the base. *Nectaries* (nectarothecæ) none. *Stamens* very numerous, yellow; *filaments* flattened, slightly dilated upwards; *anthers* adnate, broadly elliptical, bursting laterally; *pollen* yellow. *Ovaries* indeterminately numerous (about 5—20?), oblong, greenish, with yellow, somewhat recurved, glandulose and grooved, beak-like summits. *Follicles* about three-fourths of an inch in length, in shape like an inverted legume, sessile and spreading or recurved in a stellately radiated head, glabrous, purplish and shining, veined, bursting before mature along their thin upper edge. *Seeds* numerous, oblong, at first green, then brown, the white, prominent raphe dilated at its lower end into the large cellular chalyza.

Professor Bigelow (*Florula Bost.*) tells us that in America the garish blossoms of this rank, acrid, but showy plant, are brought to market as a spring nosegay, under the name of our far more elegant though less pretending Cowslip!

VIII. HELLEBORUS, Linn. Hellebore.

Calyx of 5 roundish petaloid sepals. *Petals* 8—12, very small, tubular, 2-lipped. *Follicles* coriaceous.

Perennial, bushy, fœtid herbs, nearly peculiar to the more temperate parts of Europe, with digitate or pedate leaves and broadly bracteated scapes and peduncles. Flowers usually herbaceous or purplish. Qualities violently acrid, drastic and dangerous.

1. *H. viridis*, L. *Green Hellebore*. "Stem few-flowered leafy, leaves digitate, calyx spreading."—*Br. Fl.* p. 12. *E. B. t.* 200.

In woods and thickets, very rare and scarcely wild. *Fl.* March, April. 24.

E. Med.—A single plant in St. John's wood, near the entrance at Oakfield, observed there for two or three successive years, in all probability the outcast of a garden, though none could be found in cultivation near the spot.

Whole herb like the following perfectly smooth and glabrous, with a similar though less powerfully strong smell, but devoid of rigidity, much more slender and less branched.

Rhizome pale brown, short, slender, fleshy and wrinkled, emitting many long, cylindrical, brownish fibres from 6—8 inches to 1 foot or more in length. *Stems* one or more, erect, slender, solid, succulent and flexible, as is the entire plant, subterete, faintly angular and furrowed, naked and simple below, but invested at the base with several ovato-oblong, sheathing scales, the exterior of which are white and membranous, the interior mostly greenish or purplish and sometimes leafy at the summit. At the top the stem is sparingly branched in a forked manner, the divisions diverging, more evidently furrowed and angular, each bearing a terminal flower or two, and a leaf at every bifurcation. *Radical leaves* appearing with or partly after the flowering stems, very large, on extremely long petioles, much resembling the stem, but with a deep narrow groove or channel on their upper side, and sheathed at bottom with similar scales to those just described, digitate or pedate, cleft into about 7—9 deep segments or divisions, of a deep green, flexible, and slightly fleshy or succulent, netted with depressed veins above, mostly lanceolate or oblong-lanceolate, acutely, unequally and sometimes coarsely serrate, the serratures mostly mucronato-apiculate, often incurved, the lower part of each segment entire and attenuated to the point of union with the petiole, where it is mostly purplish. These segments are extremely unequal in breadth, the outermost usually confluent, 2- or 3-cleft, occasionally dentate or slightly lobed, the rest or middlemost usually simple or cleft at the summit only. *Stem-leaves* similar to those of the root, but with fewer segments; the lowermost on short, dilated, sheathing petioles, the highest of all quite sessile, in 2, 3 or 4 mostly simple, serrated segments, always quite leaf-like, not as in the next species reduced ultimately to ovate, entire, pointed and uncoloured bracts. *Flowers* solitary at the termination of and in the forks of the branches, hence few and remote, more or less nodding or drooping. *Peduncles* from 1—2 inches in length, angular, wrinkled, and sometimes slightly pubescent at top. *Sepals* 5 or occasionally 4, obovato-rotundate, nearly equal, pale green or herbaceous, strongly nerved, often a little streaked or dashed with purplish brown at the base within, rounded and obtuse or somewhat acute, often with a small point or apiculus, entire or a little crenulate or erose, at first converging, afterwards spreading pretty widely. *Petals* (nectaries) pale green, numerous (9—12), substipitate, obconic or cyathiforin, much compressed, convex at back, concave in front, abruptly truncate, the margins erose, folded together and closing the mouth or nearly so, much shorter than the stamens, very caducous. *Stamens* deciduous, very pale buff yellow, as are the 2-celled laterally dehiscent anthers. *Pollen* globose, nearly white. *Ovaries* 3—5 (mostly but 3), erect, sessile. *Styles* longer than the stamens, spreading or recurved at top, their point (*stigma*) globoso-capitate, papilloso-glandulose.

2. *H. foetidus*, L. *Stinking Hellebore*. *Setter-wort*. "Stem many-flowered leafy, leaves pedate, calyx converging."—*Br. Fl.* p. 12. *E. B.* t. 613.

In woods, thickets and stony bushy places, along hedgebanks and on chalky declivities, but rarely. *Fl.* January—April. 24.

E. Med.—On a steep bank above the 'Crab and Lobster,' Ventnor, but possibly escaped originally from the garden of the inn. More certainly wild in rough ground between St. Lawrence's church and the old chapel at Wolverton, where it was pointed out to me by Dr. Martin in 1839, as also on a high, steep and bushy bank a few hundred yards west of the church. Under a stone fence a little to the westward of Pan's farm, in some plenty, *Albert Hamborough, Esq.*, 1845 !!! Near Hampstead, *Miss G. Kilderbee*, litt. 1846.

A smooth, bushy herb, with a strong ungrateful odour and acrid poisonous properties.

Root woody, covered with a thick, brownish black, wrinkled bark, and emitting many stout wiry fibres. Stem or rather caudex 1—2 feet high, round, smooth, naked and scarred beneath, very leafy above. Leaves scattered, evergreen, pedate, on long, deeply channelled petioles suddenly widened into almost sheathing bases, cleft to the centre into mostly 9 linear or linear-lanceolate, sharply serrated, blackish green, rigid, coriaceous segments, perfectly glabrous on both sides, gradually diminishing in size as they pass by a dilatation of their footstalks into broad leafy bracts, which towards the summit of the panicle are 3-cleft at their extremity, the uppermost ovate, quite entire and pointed. Flowers numerous, globose, drooping, in a large, lax, pale green panicle, their compressed pedicels and the upper branches of the panicle glanduloso-pubescent. Calyx (petals, Sm.) of 5 roundish or ovate, heart-shaped, concave leaves, pale green becoming edged with purple in expansion, spreading only when in seed, otherwise connivent and almost concealing the stamens, a little downy at the back. Petals (nectaries, Sm.) mostly 5 or 6, minute, deciduous, greenish, tubular and truncate, ribbed, notched on the margin, compressed, glandular and honey-bearing within at the base, but destitute of a pore. Stamens numerous, the length of the calyx, placed on a conical receptacle beneath the ovaries, falling away with the petals; anthers ovate, pale yellow, extrorse. Ovaries 2—5, most commonly 3, slightly glanduloso-pilose, united beneath, tapering into slightly curved styles the length of the stamens. Follicles 3—5, ovate, leathery, brownish, strongly and transversely veined, connate at their base. Seed rather large, ovato-oblong, smooth, somewhat wrinkled, black and shining.

The broad deeply cleft leaves, with their rigid evergreen character, and long petioles sheathing the short caudex, impart to *H. fœtidus* somewhat of the aspect of a dwarf fan-palm or palmetto.

The early and complete separation of the stamens after impregnation, whilst the less advanced flowers retain these organs, would lead us on a hasty view to pronounce this species monœcious or rather polygamous.

The acrimonious root sliced is inserted into the ears of swine as a local or counter-irritant by the cattle-leeches in Hampshire. The species is often seen in cottage-gardens, being a rustic remedy for worms in children, but the employment of so violent a medicine in unskilful hands has too often been followed by serious consequences, and its use is now abandoned in regular practice. It is from the use of the root as an issue for horses and horned cattle, that the term Setterwort is derived; the word "settering" being in use with farriers to denote the insertion of a seton or issue, and is probably a corruption of setoning. See Churchill's Med. Bot. and Bailey's Dictionary, also Gerarde, Emend.

IX. AQUILEGIA, Linn. Columbine.

Calyx of 5 petaloid, deciduous sepals. Petals 5, funnel- or cor-net-shaped, produced into a spur at base. Follicles 5, membranaceous, tipped with the persistent styles, many-seeded.

Handsome perennials, with purple or variegated nodding flowers and ternately compounded leaves, with stalked, rounded or wedge-shaped, usually 3-lobed leaflets, native chiefly to Europe, Siberia and North America in cold shady or hilly situations. The rather few species known, if not actually inert, possess but little energy as poisons.

1. *A. vulgaris*, L. Common Columbine. "Spur of the petals incurved, follicles hairy, stem leafy many-flowered, leaves nearly glabrous, styles as long as the stamens."—*Br. Fl.* p. 12. *E. B.* t. 297.

β. Flowers white.

In moist, often elevated woods and thickets, along hedges, in open pastures and on heathy, bushy commons and furze-brakes in several parts of the island; not frequent, though truly wild with us. *Fl.* May—July. 24.

E. Med.—Sparingly though certainly wild in the high wood in Appuldurcombe park. In Quarr copse, but very rarely. Abundant a year or two since amongst furze near Ninham farm, Ryde, and found by me several years previously in a wood between Ninham and Quarr, but in the former station the plant had disappeared in 1840, being apparently overpowered by the furze itself. In an old stone-pit at Binstead, *Rev. W. Darwin Fox !!!* Hedgebank of a field between Wootton bridge and Wootton common, perhaps escaped from the *Rev. W. White's* garden. On Lake common with flowers of a bright purplish red, a good many plants.

W. Med.—Very sparingly but truly wild in the elevated thicket along the crest of the chalk-pit on Alvington manor, by Carisbrooke. A plant or two observed near North Court, Shorwell, probably a stray from cultivation. Nearly at the summit of High Wood, Swainston, in one place in great abundance, covering a space of ground of many yards in radius and truly wild. (The spot is about 50 yards from a large spreading oak, standing alone in the centre of a wide glade or road cut in the wood). Plentiful in a field near Colwell barracks, and still abundant at the upper end of Colwell heath. Plentiful in a wood called the Tolt copse, near Gatcombe. In Northwood park, *Miss G. Kilderbee*. Parkhurst forest on the left hand within the gate near Mark's Corner, *Miss G. Kilderbee*!

β. Ape's down, plentifully, *Mrs. Woodrow*, according to *Mrs. Penfold*, who has received specimens from thence.

Stem thick and fleshy, branching into several stout, nearly simple fibres, divided at the crown into 2 or more (sometimes numerous) heads wrapped by the sheathing bases of the leafstalks of a former season. *Stem* one or more (?), slender, erect, from 2 to 3 or even 4 feet high, hollow, wavy, subterete and simple below, obscurely or distinctly angular above, where it divides into a few distant, upright branches; clothed all over with fine, soft, spreading pubescence, sometimes it is said glabrous. *Radical leaves* fasciculate, biternate, their common and partial stalks downy like the stem, terete, a little flattened and grooved above, the former a span or more in length, shortly sheathing at the base, with broadly scariosc entire margins; partial footstalks much shorter, about 2—4 inches in length. *Leaflets* about 1 or 2 inches long, slightly glaucous, glabrous above, whitish and finely downy beneath, cuneato-rotundate, cuneato-ovate or fan-shaped, entire at the base, more or less deeply or even subpalmately incised; the terminal leaflet shortly stalked, trifidly cut or lobed at the summit, the lobes again bifidly or trifidly incised, crenate, with usually rounded obtuse and shallow, sometimes deeper, more acute and almost toothed segments. *Lateral leaflets* sessile, subsessile, or also stalked, oblique at base and less regularly 3-lobed, otherwise like the terminal. Occasionally all the leaflets are sessile, confluent or even entire (*Bertoloni*). *Stem-leaves* few, distant, the lowermost like those at the root but on shorter stalks, those higher up almost sessile on their broad clasping sheaths, with narrower and less divided leaflets, the highest of all or those at the origin of the branches simply ternate and reduced to three elliptical, oblong, slightly cut and cleft or quite entire sessile leaflets. *Flowers* solitary, terminal, large (2 inches across), nodding, in the truly wild state mostly of a fine purplish or violet blue, sometimes, as in gardens, inclined to a reddish or pink colour, rather fugacious. *Sepals* concolorous with the petals, elliptical-oblong or ovate-oblong, with greenish thickened tips and abrupt wrinkled claws, slightly downy externally, pointed or acuminate, a little spreading only. *Petals* erect, normally 5 but sometimes double that number in the wild plant, uniformly coloured like the sepals, cornet-shaped, the limb very round and obtuse, with the margins entire, more or less revolute or reflexed, tapering into a shortish more or less strongly hooked spur, having its apex hollow, globose, and gland-like. *Stamens* numerous, the outermost shorter and spreading or recurved at their tips, the inner and longer erect, about as long as the petals; *filaments* ciliated and rugose at bottom, and mixed with lanceolate, pellucid, paleaceous scales, which are no doubt abortive or imperfect stamens;

anthers pale yellow, broadly elliptical, very flat, bursting along their edges. *Ovaries* very downy, tapering into the 5 long, simple, erect styles, which a very little exceed the inner stamens in length. *Capsules* 5, erect, cylindrical, a little downy, very clammy when green, strongly reticulated when ripe. *Seeds* numerous, oblong, gibbous at the back, acutely keeled and margined, jet-black and highly polished, attached in a double row along the dehiscent suture.

The Columbine is undoubtedly indigenous to our hilly woods and thickets, more sparingly and sporadically dispersed in the low grounds, where the plant is perhaps often an escape from cultivation.

The singularly close resemblance in the flowers of this plant to a group of birds has given rise to the English name of Columbines, from Columba, a dove; and the Latin generic one of *Aquilegia* may with as much probability have been intended to designate a gathering together of eagles, from the same bird-like conformation and grouping. There is however reason to suppose that the term *Aquilegia* may be simply the old Latin word *Aquilegium* slightly altered in termination, and which signifies a gathering or collecting of water (dew or rain) *ab aqua et lego*, a purpose for which the hollow or tubular processes or spurs (nectaries) of the petals seem well fitted, and in fact they are seldom found without a self-secreted honied liquid, which in earlier times may have been mistaken for such aqueous deposit. Rejecting these etymologies, it will be difficult to account for the length of the derivative from so simple a root, assuming the allusion to be merely to the resemblance, as has been asserted, by no means obvious, of the *blunt* nectaries to the *sharp* claws of a bird of prey. The word *Aquilegia* as altered and applied to our plant is not of classical antiquity, though the species must have been well known to the ancients by some other name, as it is a native of most parts of Europe.

X. DELPHINIUM, Linn. Larkspur.

Calyx deciduous, of 5 irregular, coloured, petaloid sepals, the uppermost sepal produced at base with a spur. *Petals* 4, the two upper with spur-like appendages which are included in the spur of the calyx; free or combined into one. *Follicles* 1, 3, or 5, mostly many-seeded.

Showy annual, biennial or perennial plants, with bright blue, purple, pink or white (never yellow) flowers. Geographical distribution the same as *Aconitum*, which this genus closely approaches in character, habit and foliage, but its sensible properties are far inferior in energy, few of the species possessing much activity as poisons.

1. *D. Consolida*, L. *Field Larkspur*. "Stem erect branched, flowers in lax racemes, petals combined, inner spur of one piece, pedicels shorter than the bracteas, follicle one glabrous."—*Br. Fl.* p. 12. *E. B. t.* 1839.

In sandy or chalky cornfields occasionally, but very rarely. *Fl.* June, July. ☉. Cornfields above the Undercliff, *Mrs. Cope*. In a cornfield at Westbrook, *Albert Hamborough, Esq.*! Sandy cornfield between Blackgang and Chale, *Miss Kirkpatrick*.

XI. ACONITUM, Linn. Aconite, Wolf's-bane.

Sepals 5, petaloid, coloured, irregular, the upper one hooded or helmet-shaped. *Petals* (nectaries, *Sm.*) 2 (the 3 lowermost wanting or rudimentary), stipitate, tubular, concealed in the galeate upper segment of the calyx.

Perennial, never annual plants, indigenous to the colder or alpine regions of Europe, Asia and America, with deeply palmate or multifid leaves like those of some *Ranunculi*, and dark blue sometimes pale yellow flowers in terminal racemes. Many but not all of the species are acrid narcotic poisons of great virulence, owing to the presence of aconitin, a vegetable alkaloid of tremendously fatal energy.

*1. *A. Napellus*, L. *Common Wolf's-bane, or Monk's-hood*. "Upper sepal arched at the back, spur of the nectary nearly conical bent down, wings of the stamens cuspidate or none, lobes of the leaves cuneate pinnatifid."—*Br. Fl.* p. 13. *E. B.* t. 2730.

In wet thickets and by streams; very rare and not indigenous. *Fl.* May—August. 4.

In some plenty by the brook (Newtown river) between Newbridge and Mill Green or Upper Calbourne mill, pointed out by my friend the *Rev. James Penfold*!!! Sparingly in a wet thicket by the Medina just out of Newport, *G. Kirkpatrick, Esq.*!!!

Germens commonly 3, rarely more (Gaudin says he never saw 5), the two inferior *calyx*-segments extremely unequal, sometimes there are 3, and usually a few coloured scales (abortive filaments) between the calyx and stamens. The species is extremely variable according to soil, elevation, &c., and has been split into several others by continental botanists. It has been cultivated amongst us from time immemorial; it is therefore not surprising that it should occur spontaneously in situations analogous to its native places of growth; the wonder only is that it should have escaped notice until within these few years in the many stations now recorded, as it cannot be imagined that its tendency to become naturalized was less formerly than at present.

Order II. BERBERIDACEÆ, Vent.

A small order of shrubs or herbs, with compound, usually exstipulate leaves and an imbricated aestivation. *Sepals* 3—4—6, mostly in a double row, often coloured, and subtended by petaloid bracts. *Petals* hypogynous, equal or double in number to the sepals, often with glands or hollow appendages below on their inner side. *Stamens* as many as the petals, and opposite to them; anthers 2-celled, each cell opening by a valve or lid from bottom to top. *Ovary* 1-celled; *ovules* anatropous, attached laterally at the base of the cell. *Fruit* baccate or capsular. *Seeds* few or many; *embryo* straight in the axis of the firm albumen.

I. BERBERIS, Linn. Barberry.

Calyx of 6 deciduous, concave, coloured sepals, subtended by 2 or more petaloid scales or bracts. *Petals* 6, usually with a pair of glands on the inner side of each, near the claw. *Berry* 1-celled, 2—3 seeded.

Prickly, rarely unarmed shrubs, with yellow bark and wood, the scattered, fascicled or pinnate leaves mostly without stipules, and the primary ones reduced to simple or triple acicular spines. Flowers yellow. Bark astringent; leaves and fruit acid and refrigerant.

The Barberries are natives of temperate and mountain regions in Europe, Asia and North and South America.

†1. *B. vulgaris*, L. *Common Barberry*. Spines 3-parted, leaves oblong obovate ciliato-serrate, racemes many-flowered pendulous, petals entire. *Br. Fl.* p. 14. *E. B. t.* 49.

In woods, thickets and hedges; a very doubtful native. *Fl.* May, June. ½.

W. Med.—In a field-hedge between Thorley and Shalcomb, abundantly for a few yards, but confined to one spot, and perhaps not really indigenous there, *Rev. James Penfold* and *Mr. Barnabas Beere* !!! *Mr. Penfold* finds on inquiry of the labouring population, testimony to the existence of the Barberry in the station just given sixty years ago.

Order III. NYMPHÆACEÆ, DC.

“Those virgin lilies all the night
Bathing their beauties in the lake,
That they may rise more fresh and bright,
When their beloved Sun’s awake.”

Paradise and the Peri.

“*Sepals* about 5, often gradually passing into the numerous *petals*, and these again into *stamens* which arise from a fleshy disk surrounding more or less entirely the many-celled and many-seeded *ovary*. *Stigma* peltate, rayed. *Seeds* in a gelatinous aril. *Albumen* farinaceous. *Embryo* enclosed in a membranous bag. *Cotyledons* foliaceous.—*Aquatic* herbs, with *peltate* or *cordate* leaves and *magnificent* flowers.”—*Br. Fl.*

I. NYMPHÆA, Linn.

“*Calyx* of 4—5 sepals. *Petals* inserted as well as the *stamens* upon a fleshy disk or covering to the *ovary* (so as apparently to arise from it). *Berry* many-celled, many-seeded.”—*Br. Fl.*

*1. *N. alba*, L. *White Water-lily*. Leaves cordate entire, stigma of 16 ascending rays. *Br. Fl.* p. 15. *E. B. t.* 160.

Naturalized in ponds, clear still rivers and ditches. *Fl.* July.

W. Med.—Ponds at Swainston, most probably planted.

E. Med.—Pond at Fernhill, but introduced, *Mrs. Saunders*!

My friend [the late] Edward Vernon, Esq., jun., was told it grows in a pond near Blackwater.

I have observed *Nymphaea* truly wild in the ditches at Gomer pond, near Gosport, and immediately opposite Ryde.

Order IV. PAPAVERACEÆ, Juss.

“*Calyx* of 2 rarely 3 deciduous sepals. *Corolla* of 4 rarely 5 or 6 petals. *Stamens* indefinite. *Ovary* 1-celled. *Stigma* lobed or rayed. *Fruit* dry, with 2 or more parietal usually projecting placentas, forming complete or incomplete dissepiments, hence 1- or several-celled, many-seeded. *Embryo* in the base of a fleshy albumen.—*Herbaceous* plants. Leaves *alternate*.”—*Br. Fl.*

I. PAPAVER, *Linn.* Poppy.

"Sepals 2 rarely 3. Petals 4 rarely 6. Stigma sessile, radiated. Capsules with the seeds on parietal placentas projecting towards the centre of the single cell, and escaping by pores beneath the permanent rayed sessile stigma."—*Br. Fl.*

§ Capsules bristly.

1. *P. Argemone*, *L.* Long Prickly-headed Poppy. "Capsule clavate hispid with erect bristles, filaments dilated upwards, stem leafy, leaves bipinnatifid."—*Br. Fl.* p. 16. *E. B. t.* 643. *Fl. Dan.* v. t. 867, (*optima*).

Very frequent in cultivated and waste ground, amongst corn, clover, &c., and on dry banks, in light sandy or gravelly soil. *Fl.* May—July. ☉.

E. Med.—Abundant in sandy fields about Newchurch. Cornfields by the footway from Sandown to Shanklin, also about Cliff farm, Lee farm, and elsewhere in that vicinity. Between Lake and Sandown, also in cornfields between Yaverland and the sea, plentifully. Abundantly in cornfields near Wellow, Newchurch. A variety with the petals deeply lacinated, in some specimens so much so as almost to appear fringed, I found in a field nearly opposite Cliff farm in some plenty, mixed with the common state of the plant. Fields between Lake and the sea, *Mr. Snooke*.

W. Med.—By Calbourne New Barn.

Root annual, whitish, long and tapering, simple or a little branched, rigid. *Stem* in very small plants solitary and erect, in large and luxuriant ones numerous, procumbent and ascending below, from 5 or 6 inches to a foot or rather more in height, round, solid, rigid, leafy, slightly milky, distantly and alternately branched, rough with long, scattered, erect, subappressed or (particularly at the base of the stems) partly spreading white hairs. *Leaves* very similar to those of the next species, more or less hirsute with long, white, stiffish, simple hairs, deeply bi- or tripinnatifid, the radical ones on rather long grooved petioles, those of the stem becoming by degrees quite sessile, the primary segments opposite or alternate, in all usually remote, especially the basal pair, which is mostly very distant, larger than the rest and often tripinnatifid, frequently absent on the lower stem- and root-leaves; secondary or ultimate segments various in size and shape, more or less lanceolate, ovate or linear, entire or (often trifidly) cleft or toothed, each segment tipped with a short straight bristle, their margins thickened and deflexed. *Flowers* solitary, on long, terminal and axillary, flexuose peduncles covered with close-pressed hairs, drooping in the bud, afterwards erect, very fugacious, smaller than any of the following, and expanding indifferently at all hours of the day. *Bracts* none. *Calyx* more or less bristly with stiff hairs curved upwards and springing from tubercles. *Petals* light brilliant scarlet, with a large obovate shining spot of purplish black at their base, about 1 inch or $1\frac{1}{4}$ inch long, cuneate, obovate, rumpied, with a satiny gloss, their summits somewhat notched, from their more attenuated form not contiguous or overlapping each other, but spreading widely asunder. *Stamens* erect, the inner ones about as long as the germen; *filaments* dark purple, shining, gradually dilated upwards to an oblong shape, and bearing on their mucronate tips the pale whitish blue compressed nearly orbicular *anthers*. *Germen* clavato-obconic, hispid with long erect or appressed slightly curved bristles. *Stigma* with from 3—6 violet-blue rays. *Capsules* pale greenish ash-colour, about $\frac{3}{4}$ of an inch long, club-shaped, with as many whitish slender ribs* as there are rays on the stigma, the

* These ribs upon the capsule mark the places of the insertion of the interior placentæ to which the seeds are affixed, and of which the rays of the stigma are but the superior extremities.

intermediate space wrinkled but not furrowed (as is usually the case in the next species, where these ribs are far less conspicuous), beset as in that with similar curved bristles but less copiously. *Seeds* numerous, kidney-shaped, leaden gray or ash-coloured, sometimes pale red and apparently abortive, beautifully sculptured with longitudinal ridges and deep intermediate depressions.

The smallest of our Poppies, and readily known by its four narrow bright scarlet petals with dark purple claws, and the fine blue of its anthers.

2. *P. hybridum*, L. *Round Prickly-headed Poppy. Mongrel Poppy.* "Capsule subglobose hispid with spreading bristles, filaments dilated upwards, stem leafy, leaves bipinnatifid."—*Br. Fl.* p. 16. *E. B. t.* 43. (The figure in *E. Bot.* is a very indifferent representation of our plant).

In dry sandy and especially chalky cornfields, frequent. *Fl.* May—July. ☉.

E. Med.—At the E. end of Brading. At Bonchurch, Ventnor, St. Lawrence, and other parts of Undercliff. Cornfields above Sandown bay, occasionally.

W. Med.—Frequent about Yarmouth, and in cornfields near Wellow with *P. Argemone* and *Bupleurum rotundifolium* in 1840. Abundantly in 1842 along the edge of a cornfield just above Calbourn New Barn. Carisbrook common field, *George Kirkpatrick, Esq.*

Root whitish, tapering, nearly or quite simple. *Stems* several or in small specimens solitary, from 6 to 18 inches high, somewhat lax, erect, ascending or spreading, irregularly branched, round, solid, rigid and leafy, harsh to the touch from minute scabrous points, and covered with white hairs, which on the stem itself are long, soft and spreading; on the peduncles and higher branches shorter, close-pressed and rigid. *Leaves* rough and almost hoary with pale hispid pubescence; the radical ones and those towards the base of the stem on long channelled petioles; those higher up sessile; all doubly and deeply pinnato-pinnatifid, the segments flat, lanceolate, linear-lanceolate or ovate, bluntish, tipped with a bristle, their margins revolute and edged with distant setaceous hairs, which on the midrib beneath are longer and close-pressed. The basal pair of primary segments in the stem-leaves is usually remote from the rest and occupying the place of stipules. *Peduncles* axillary and terminal, single-flowered, very long, covered with stiff close-pressed hairs, lax and drooping in flower, afterwards rigid and erect. *Flowers* small, intermediate in size between the last and the following species, extremely fugacious, expanding early in the day, and falling long before evening. *Calyx* very hispid, with long hairs curving upwards and seated on pale warty tubercles. *Petals* obovato-rotundate, in colour between a pale scarlet and rose-red, with a purple-black and shining spot on the claws, rumples, much notched along the margin, spreading horizontally. *Stamens* erect, their filaments dilated upwards and flattened, dark purple; *anthers* pale blue; *pollen* white. *Stigma* small, 6- or 7-rayed. *Capsule* mostly subglobose, more or less elongated, and approaching that of *P. Argemone* in form, but the ribs are never so strongly marked; setoso-hispid like it, but the bristles are usually thicker set and more curved, and the intercostal faces are obscurely furrowed. *Seeds* kidney-shaped, shorter and rounder than in the last, blackish, yellowish or reddish brown; far less beautiful, covered only with a coarse sculpture of angular cells without longitudinal ridges.

This species has by some been erroneously thought a hybrid between the foregoing and following species, but the very slight resemblance it bears to the latter, its exclusively matutinal hours of blossoming, the different colour of the flowers from those of either of the other two, and its more limited geographical range in comparison with theirs, are conclusive against the truth of such an opinion.

§§ *Capsules smooth.*

3. *P. dubium*, L. *Long Smooth-headed Poppy*. "Capsule glabrous oblong, crenatures of stigma distinct, filaments subulate, stem hairy, bristles of the flower-stalks appressed, leaves once or twice pinnatifid sessile."—*Br. Fl.* p. 16. *E. B.* t. 644.

In cornfields and other cultivated ground, on wall-tops, waste places and by waysides, frequent, though less abundant with us than the following. *Fl.* May—July. ☉.

In pastures in various parts of the Island.

E. Med.—Shanklin Chine. Cornfields above Sandown.

W. Med.—About Carisbrook castle.

Capsules whitish brown, quite glabrous, ovoid-oblong or subclavate, about 9 or 10 lines in length, strongly ribbed, especially near the base, the intercostal spaces venosely rugose, the truncate summit rather narrower than the plane 7—10 (mostly 8 or 9) rayed stigma. In small starved specimens the stigma is 6, 5 or even 4-rayed; in the latter case the germen and capsule are quadrangular. *Seeds* numerous, subdiaphanous, in size, colour, shape and sculpture scarcely in the least differing from those of *P. Rhœas*.

4. *P. Rhœas*, L. *Common Red Poppy or Corn Rose*. *Vect. Red-weed*. "Capsule glabrous nearly globose, crenatures of the stigmas overlapping each other at the margin, filaments subulate, stem bristly, leaves once or twice pinnatifid sessile."—*Br. Fl.* p. 16. *E. B.* t. 645.

In cultivated land, amongst corn, clover, &c., abundantly. *Fl.* May—October. ☉.

A single specimen with the flower pure white found in a cornfield above Sandown bay, July, 1842; (a beautiful variety).

β. intermedia. Stem more branched near the root, hairs fewer, those on the peduncles appressed (except immediately beneath the flower); capsules rather less globose, *Dr. Bell-Salter*. An *P. intermedium*, *Beck*, *Fl. der Gegendum Frankfurt am Main*, i. p. 836, and *Reichenb. Iconog.*?

A fleshy herb, of a pale glaucous green and slightly milky. *Root* whitish, tapering, hard and woody in the centre, simple or a little branched. *Stems* numerous, erect or ascending at the base, about 2 feet high, much branched, round, solid, leafy, hispid with white or purplish, scattered, spreading, simple and almost pungent hairs, seated on tubercular bases. *Leaves* alternate or partly opposite, rough on both sides with erect bristly hairs like those on the stem; root- and lower stem-leaves on channelled petioles, oblong, pinnatifid, the superior pinnae often confluent, and then mostly forming a broadish ovate or oblong, variously incised or inciso-serrate terminal lobe; upper stem-leaves more or less completely sessile, deeply and remotely pinnatifid, the segments mostly lanceolate, linear-lanceolate or tooth-like, callous, obtuse, bristle-tipped, variously and acutely cut or dentate, the margins a little reflexed, their terminal lobes narrow and often nearly entire. *Peduncles* axillary and terminal, very long, single-flowered, more or less flexuose, erect and rigid in blossom and seed, lax and drooping at the summit when in bud, extremely rough and harsh with bristly and (except in var. *β.*) spreading purplish hairs. *Bracts* none. *Flowers* very large, from 2½ to 4 inches in diameter, remaining expanded throughout the day. *Sepals* deciduous, ovate, concave, with narrow diaphanous margins, hispid with similar hairs to those on the stem, but curved upwards and springing from much larger tubercles. *Petals* bright scarlet of various shades of intensity, in dry sandy fields sometimes as pale as in the foregoing, rather unequal, the two exterior and larger nearly semicircular, the two inner and smaller subcuneato-rotundate; all spreading, undulated and rumped, generally with a shining purplish black spot on their claws.

Stamens about as long as or rather longer than the germen, their filaments purplish, angular, slender, not at all dilated upwards nor hollow within; *anthers* purplish, ovato-elliptical, flattened, 2-lobed, bursting by their lateral margins; *pollen* greenish and globular. *Germen* truncately ovate or urceolate, crowned with the 9—12 rayed convex or flattish stigma, the rays dilated or clavate at their ends and covered with a purple glandular pile or pubescence. *Capsule* pale whitish brown, crowned with the equally broad or even slightly projecting persistent stigma; urceolate, with a more or less subglobose or ovate form, quite glabrous, with many distinct but not prominent ribs, the intercostal spaces plane. *Seeds* numerous, roundish kidney-shaped, reddish, grayish or blackish, subcompressed, covered with a regular network of angular cells.

About Godshill, and perhaps elsewhere in the island, the Poppy is used to feed pigs with, as I can myself testify, having seen it collected for that purpose; and on inquiry I learn that this narcotic plant is considered very wholesome and nourishing food for them, either alone or mixed with their wash.

It is remarkable that this and the other species of Poppy, the disposition of which to wander obtained for them amongst the old writers the title of "erraticum," should have little or no tendency to establish themselves in the United States or in Canada, where so many of our common European weeds have obtained an extensive and in some cases injurious footing, favoured by the similarity of soil and climate to the country from which they migrated.

5. *P. somniferum*, L. *White or Opium Poppy*. "Glaucous, capsule globose glabrous, filaments dilated upwards, stem and amplexicaul leaves usually glabrous."—*Br. Fl.* p. 17. *E. B. t.* 2145.

Naturalized in waste and newly turned-up ground, on building-lots and rubbish-heaps; more rarely in cornfields, on sand or chalk, and principally at the back of the Island. *Fl.* July. ☉.

E. Med.—Frequent at Ventnor, coming up wherever the soil is disturbed for building or gardens. On rough ground near the sea between Steephill and St. Lawrence. On waste ground nearly below the Pulpit rock, Bonchurch. Cornfield near Yaverland, 1840.

Root annual, whitish, woody and tapering, a little branched. *Stem* stout, solitary, erect, simple in the smaller, branched above in the larger plants, but always less so than in any of our other species, rounded, slightly furrowed and angular, spread over with glaucous bloom, very leafy, from about 2 to 3 or even 4 feet high. *Leaves* large, somewhat fleshy, covered with the same glaucous bloom as the stem, patent or suberect, undulated or quite sessile, those at the root oblong, a little narrowing to the base, the rest gradually widening to a more ovate form, heart-shaped at their base, their lobes amplexicaul, all copiously, acutely and unequally incisoserrate or crenate, sinuately lobed, the serratures thickened at their tips and often armed with a bristle; the margins and disk of the leaves much waved or crisped and deflexed. *Peduncles* single-flowered, glabrous or beset with scattered, rigid, spreading hairs. *Flowers* at first drooping, then erect, very large, 3 or 4 inches across, extremely variable in colour, from white to every shade of purple or crimson, often even in spontaneously springing plants double or semidouble. *Calyx* smooth, glabrous, green or purplish. *Petals* unequal, the exterior largest, roundish wedge-shaped, the two interior narrower, striated with veins that are prominent and rib-like at the back, the base of each petal marked with a large obovate spot of dark purple. *Stamens* whitish, their flattened filaments a little enlarged or clavate at the summit; *anthers* sublinear, oblong, pale. *Germen* goblet-shaped, contracted above the insertion of the stamens into a kind of foot as in that utensil. *Stigma* peltate, convex, its projecting margin deeply lobed, the lobes membranaceous, free.

The entire plant when broken or cut emits a milky, acrid and very bitter juice, which turns brown by contact with the air, and when inspissated becomes the well-known and valuable drug called opium.

I have seen the Opium Poppy so troublesome a weed in cornfields about Cobham near Rochester, that women were employed to root it out. It had most likely been cultivated there antecedently for the use of the druggists.

A native it is said of Asia, but now naturalized in most parts of Europe as far North as St. Petersburg, having escaped from gardens or fields, in which it is generally cultivated, both as an ornamental border annual, or on an extensive scale for the oil afforded by its seeds, in great use in Flanders for culinary purposes, as well as for the large globose capsules, called Poppy-heads, of well-known efficacy in an anodyne decoction, and from which in the East opium is produced.

II. GLAUCIUM, *Tourn.* Horned Poppy.

"*Sepals* 2. *Petals* 4. *Stigma* 2-lobed, sessile. *Pod* linear, the two *placentas* at length connected by a spongy dissepiment, hence 2-celled, 2-valved. *Seeds* dotted without a crest."—*Br. Fl.*

1. *G. luteum*, Scop. *Yellow Horned Poppy. Sea Poppy. Sea Celandine.* "Pod minutely tuberculated, cauline leaves amplexicaul sinuate, stem glabrous."—*Br. Fl.* p. 17. *E. B. t.* 8. *Chelidonium Glaucium*, *L.*

On the sandy or shingly sea-beach, cliffs and waste ground along the shore, not unfrequent; rarely somewhat inland. *Fl.* June—October. ♂. *Sm. et alior.* ☉. *sec. Hook. Huds. &c.**

E. Med.—On the Dovor, Ryde. Plentiful on St. Helen's spit. Near Cowes, Steephill, and Ventnor, and most other parts of the coast, *Mr. Snooke*. [Chalk-pit at Ashley down, three miles from the sea, *Dr. Bell-Salter*, Edrs.]

W. Med.—At Freshwater gate. Abundant along the shore between Norton and the preventive-station.

Herb extremely brittle, exuding from the fractured part an orange-coloured juice, in small quantity and having the smell of opium.

Root long, tapering, but little branched, reddish and fleshy externally, with a rough epidermis; tough, woody and fibrous in the centre, and running deeply down in the loose sandy or shingly beach. *Stems* several, 2 or 3 feet high, branched, diffuse or partly decumbent, round, solid, quite smooth, with a glaucous bloom. *Leaves* whitish or sea-green coloured, veined, fleshy, densely clothed with short, erect, rigid and jointed simple hairs, the radical ones and those of the first year numerous, very long, spreading on the ground in a circular form, deeply pinatifid, their segments waved, angulato-dentate, cut and lobed, diminishing towards the long, semicylindrical, slightly winged petiole, the terminal segments roundish, 3- or 5-lobed; those on the stem sessile, the lowest much like those of the root, the upper ones far shorter, broader and less deeply cut, clasping the stem with their deflexed basal lobes, glabrous or very nearly so beneath. *Flowers* on rather short stalks, lateral and terminal, solitary, very large (above 3 inches in diameter), bright yellow verging on orange. *Calyx* of two large, ovate, concave leaves, bristly, attached to a circular disk on which the stamens are placed, falling off immediately on expansion. *Petals* 4, fugacious, crumpled, minutely notched along the margin, without claws, the 2 exterior nearly orbicular, the 2 inner wedge-shaped or cordato-cuneate. *Stamens* very numerous, in several rows; *filaments* tubular, partly filled with cellular tissue; *anthers* erect, saffron-yellow, 2-celled, bursting along their outer margins. *Germen* linear, compressed, with a deep lateral furrow, usually bent, covered with small vesicular points. *Stigma* yellowish, sessile, of 2 oblong, decurrent or deflexed lobes with a central furrow. *Capsule* pod-like, variously crooked and recurved, 8—10 inches to a foot or upwards in length, linear, tapering, tipped with the stigma, compressed, with a strong groove on each side, when green scabrous and subtuberculate, smooth and brownish when ripe, 2-valved, splitting from the apex downwards (not from the base towards

* I have little doubt the root is mostly if not always biennial.

the point as in *Chelidonium*). *Seeds* numerous, rotundato-reniform, blackish or reddish brown or ash-gray, without a caruncle, beautifully ribbed longitudinally with connecting costæ dividing the interstices into shallow quadrangular cells, more or less immersed in the corky mass connecting the narrow dissepiments that are placed between the valves, which separate from them, as they do from one another, by the falling out of the interposed spongy placenta when the seeds are ripe.

Dr. Rutt, in his 'Natural History of the County of Dublin,' vol. i. p. 172, gives a ludicrous account from the 'Philosophical Transactions' of the effect produced upon some persons partaking of a pie made with the roots of this plant through mistake for those of *Eryngo*.

The flowers, Mr. Pamplin observes, vary occasionally in colour, at times approaching to that of the Greek *G. fulvum*.

III. CHELIDONIUM, Linn. Celandine.

"Sepals 2. Petals 4. Stigma 2-lobed. Pod superior, linear, 1-celled, 2-valved, valves separating from the base upwards. Seeds crested."—*Br. Fl.*

1. *C. majus*, L. Common Celandine. Swallow-wort.—*Br. Fl.* p. 18. *E. B. t.* 1581.

In waste ground, amongst rubbish, on old walls and shady hedgebanks, not very commonly, and generally near habitations. *Fl.* May—August. *Fr.* July. 24.

E. Med.—In the garden-hedge at the back of a cottage between Godshill and Saynham. In a cottage-garden hedge close to Merry-Garden farm near Shanklin. In the lane between Nettleston green and Fairyhill. Common at Newchurch. Sandown. Upper Bordwood. Near Ventnor.

W. Med.—Grounds at Northcourt, Shorwell. Hedge near Schoolhouse green, and between Freshwater church and the bridge. Near Plash, at the turning off from the road to Shorwell.

A variety with double or semidouble flowers is sometimes seen in gardens, and is rather ornamental.

Root thick, fleshy, emitting several long, stout, reddish brown fibres, and when cut exuding a deep saffron-coloured acrid and bitter juice smelling like that of poppies or opium, and pervading the whole plant, but of a paler colour near the top of the stem and in the leaves. *Stems* several, from 18 inches to 2 or 3 feet high, erect, rounded or slightly angular, solid and brittle, tumid and glaucous at the base and above the insertion of the irregular, spreading, mostly alternate or subdichotomous branches, where, as well as occasionally on the internodal portion, they are clothed with stiff, jointed, spreading and glaucous hairs. *Leaves* alternate, opposite to or beneath the forks of the stem, thin, wrinkled and glabrous, gray beneath, where are a few scattered hairs on the prominent reticulating veins; deeply pinnato-pinnatifid, of 3, 4 or 5 pairs (with an odd terminal one) of roundish or subovate, opposite or alternate leaflets (pinnæ), which are partly distinct and as it were stalked, but as often confluent by the expansion of their bases into the common, winged, nearly semicylindrical and somewhat hairy petiole; all sinuately lobate, their extremities subtrifid, and often there is a distinct lobe at the base of the pinnæ on its lower side: lobes cut into rounded unequal segments by narrow sinuous notches, the margins of the lobules inflexed: the radical leaves are petiolate, those of the stem and branches sessile. *Clusters* umbellate. *Umbels* few- (about 4—7) flowered, terminal or opposite to the leaves, on long hairy or smooth stalks of various length. *Flowers* on smooth or somewhat hairy pedicels of very unequal length, their tumid bases half embraced by the small, glaucous, sometimes rather leafy bracts, extremely fugacious. *Calyx* of 2 boat-shaped valves of a delicate membranous texture, pale green and faintly reticulated, ending in a subglobose point, more or less hairy. *Petals* 4, bright yellow, obovate or subrotundate, thin and delicate, quite entire. *Stamens* about 20—25, erect;

filaments bright yellow somewhat compressed, slightly dilated upwards, suddenly contracted at top into a short point or pedicel bearing the anther; *anthers* pale yellow, broadly elliptical, much compressed, of 2 narrow somewhat curved lobes bursting along their thin margins, and approximate by a lamina-like connectivum. *Style* short, thick; *stigma* of 2 short, decurrent, pale lobes, glanduloso-pilose, grooved. *Germen* about the length of the stamens, green, elongate-elliptical, flattened. *Pods* (follicles) about $1\frac{1}{2}$ inch long, crooked linear, greenish or yellowish brown, glabrous and beaded from the seeds within, of 2 flexible valves opening longitudinally from the base to the point. *Seeds* numerous, oval, nearly black, polished, beautifully reticulato-striate, attached to a filiform receptacle along the commissures by a large, white, carunculate appendage.

From every part of the herb when broken exudes a gamboge-coloured juice with the flavour of opium, the stain of which is not easily got rid of by washing. The expressed juice or a decoction of the plant is in vogue with the country people of the island as a remedy for infantine jaundice (*Mr. R. Loe*), and in America is a popular application to warts, tetters, &c. (*Darlington*).

Order V. FUMARIACEÆ, DC.

"*Sepals* 2, deciduous. *Petals* 4, more or less united, one or two of them gibbous or spurred at the base. *Stamens* 6, in two bundles. *Ovary* 1, with two opposite parietal *placentas*. *Style* filiform. *Stigma* lobed. *Fruit* dry, indehiscent, with one or two seeds; or a *pod* with two valves and many seeds. *Seeds* glossy, with a fleshy *albumen* and *embryo* at the base."—*Br. Fl.*

"Herbs of temperate climates with brittle stems and watery juice, slightly bitter and diaphoretic."—*Br. Fl.*

I. FUMARIA, Linn. Fumitory.

Petals 4, one of them gibbous or spurred at the base. *Ovary* 4-ovuled. *Fruit* indehiscent, 1-seeded, the *style* deciduous. *Seeds* without a crest.

1. *F. capreolata*, L. *Rampant Fumitory*. "*Sepals* broadly oval scarcely acute toothed at the base entire above as broad as the tube of the corolla and often half its length, fruit globose obtuse, leaflets flat."—*Br. Fl.* p. 19. *E. B.* t. 943.

In waste ground, gardens and cultivated fields, on hedgebanks and about fences, not uncommon. *Fl.* May—November. ☉.

E. Med.—On the shingly beach a little west of Ryde, in some abundance. On the Dovor. Very common at Shanklin and Ventnor, as in a fence by the road opposite St. Boniface cottage, and by the 'Crab and Lobster,' &c. In and about the garden of the Shanklin hotel. Entrance to Apse heath, in plenty, *B. T. W.*

W. Med.—Field near Gurnet bay, abundantly, *Miss G. Kilderbee*.

Herb of a tender, pale, more or less glaucous green, quite smooth. *Root* yellowish, tough. *Stems* numerous, much branched, angular, furrowed, brittle and pellucid, various in length, in open places diffuse or procumbent, a foot or two in length, amongst bushes rampant and much longer, often 3 or 4 feet. *Leaves* alternate, bi-tripinnate, on long triquetrous petioles, by the aid of which, being destitute of cirrhi or tendrils, the plant supports itself amongst bushes, &c. *Leaflets* stalked, broad, roundish wedge-shaped, trifid, their segments unequally bi-trilobate, more rarely entire, ovate, bluntish, with a minute deflexed point, glaucous beneath. *Racemes* erect, many-flowered, opposite to and about as long as

the leaves. *Pedicels* not twice the length of the ripe seed-vessel, round, swollen upwards, erecto-patent when in fruit and slightly decurved, each subtended by a lanceolate whitish or purplish bractea about equal to or one-third shorter than the fructiferous pedicel itself. *Flowers* variable in size, larger than in the next species. *Sepals* broadly ovate, apiculate, irregularly toothed on their posterior half, mostly entire towards the point, as wide as or wider than the sublinear corolla, and about half as long, excluding the gibbous base of the latter. *Corolla* white or pale pink with dark purple tips, the upper and lower *petals* with a prominent keel, greenish at the apex. *Fruit* subglobose, a little longer than broad, with a minute apiculus, faintly 2-edged (from the indehiscent commissure of the valves). *Seed* yellowish, orbicular, smoothish, with a rather sharp vertical edge all round answering to the suture, and an indistinct or incomplete one at right angles to the former, visible only at the base of the seeds, at the summit of which is a double confluent depression on either side.

I cannot discover more than three filaments in this plant, two above the style, closely cohering, and one below it.

2. *F. officinalis*, L. *Common Fumitory*. "Sepals ovato-lanceolate acute sharply toothed, fruit globose very abrupt or obcordate."—*Br. Fl.* p. 19. *E. B.* t. 589.

In waste and cultivated ground, fields and gardens, almost everywhere. *Fl.* through the summer. ☉.

3. *F. micrantha*, Lag. *Small-flowered Fumitory*. "Sepals petalate orbicular somewhat cordate at the base inciso-dentate at the margin concave at the back, about twice shorter than the corolla and one and a half or twice broader, fruit globose subapiculate, segments of the leaves narrow linear grooved."—*Br. Fl.* p. 19. *IC. Plant.* t. 363. *E. B. Suppl.* t. 2876.

In cultivated ground. *Fl.* May—September. ☉.

A single specimen found by Dr. Bell-Salter at Weeks' Field, near Ryde, 1843.

II. CORYDALIS, DC. *Corydalis*.

"*Petals* 4, one of them gibbous or spurred at the base. *Ovary* many-ovuled. *Pod* 2-valved, compressed, many-seeded. *Seeds* with a crest."—*Br. Fl.*

1. *C. claviculata*, DC. *Climbing Corydalis*. "Stem much branched climbing, leaves pinnate, pinnæ stalked ternate or pedate, leaflets elliptical entire, petioles ending in tendrils, pedicels very short scarcely so long as the minute bracteas, root fibrous, style persistent."—*Br. Fl.* p. 20. *Fumaria*, L.: *E. B.* t. 103.

In moist woods, thickets, hedges and damp shady pastures, but very local. *Fl.* June, July. ☉.

E. Med.—In a fir-plantation in Bordwood copse. In several parts of Sandown Level, and on the skirts of Lake common abundantly. Parsonage Lynch, Newchurch. In a wood immediately below Queen Bower, sparingly.

Order VI. CRUCIFERÆ, *Juss.*

"*Calyx* of 4 sepals. *Petals* 4. *Stamens* usually 6 and tetradynamous; 2 solitary, alternate with the petals; 4 opposite to them in 2 pairs; rarely only 4 and equal. *Ovary* and *style* 1; *hypogynous glands* at the base of the solitary stamens. *Pericarp* usually a *pouch* or *pod*, 2- rarely 1-celled, 2-valved, the valves opposite the shorter stamens; sometimes valveless. *Seeds* on marginal placentas (between the longer stamens) without *albumen*. *Radicle* curved. *Cotyledons* plane, parallel to the dissepiment and with their edges applied to the radicle (*accumbent* o=); or plane, with their back turned to the radicle (*incumbent* o||); or folded and embracing the radicle (*conduplicate* o>>).—*Herbs*. *Leaves* alternate. *Flowers* generally in corymbs which at length become racemes."—*Br. Fl.*

Suborder I. SILIQUOSÆ.

Fruit an elongated narrow pod 2-valved and dehiscent.

I. MATTHIOLA, *R. Br.* *Stock*.

"*Pod* (rounded or compressed) crowned with the connivent 2-lobed stigma, the lobes either thickened at the back or with a horn at the base. *Calyx* erect, 2 opposite sepals saccate at the base. Longer filaments dilated."—*Br. Fl.*

1. *M. incana*, *R. Br.* *Hoary Shrubby Stock*. *Stock Gilly-flower*. "Stem shrubby upright branched, leaves lanceolate entire hoary, pods cylindrical without glands."—*Br. Fl.* p. 23. *Cheiranthus*, *L.*: *E. B.* t. 1935.

On sea-cliffs, rare. *Fl.* April—October. 17.

E. Med.—Ventnor Cove. Plentiful in almost inaccessible parts of the cliff at Steephill, particularly a little E. of the flagstaff. A single specimen observed on the cliff nearly opposite the house at Old Park, 1841.

W. Med.—Ledges of the cliff under Afton down, for which additional station for this very rare plant I am indebted to my friend the Rev. James Penfold of Thorley, who sent me superb specimens from thence in 1839.

Probably naturalized in the above stations from gardens, of which it has been a denizen for centuries past. Be that as it may, the species is now found growing abundantly in situations the least accessible and most remote from cultivation. Truly native of the shores of the Mediterranean, but as a stranger elsewhere in latitudes as high as our own, its indigenous origin may be fairly questioned. Said to grow also at Hastings, but I never saw it during some years' residence there.

Root perennial, at least in the wild plant, long, stout, flexuose and branching, white and fleshy externally, hard and woody within. *Stem* erect or nearly so, rounded, in the older plants often an inch or an inch and a half in diameter, with a grayish white wrinkled bark, very woody and lasting, mostly dividing at a few inches above ground into numerous, irregular, crowded, almost whorled ascending branches, the erect extremities of which are again proliferously ramified, forming a bushy head a foot or two in height, the branches naked, scarred or leafless,

excepting at or near their summits, those of the year downy with short stellate pubescence. *Leaves* mostly crowded into tufts at the ends of the branches, on the young or flowering shoots alternate or two or three together, oblong-lanceolate, quite entire, thick and fleshy, dull whitish green, flat, very obtuse and rounded at their apex, more or less decurved, the lower leaves for the most part very strongly arched, covered on both sides with fine stellate pubescence, but quite destitute of those callous pedicellate glands which are found on *M. sinuata*, gradually tapering into thick 2-edged petioles which are rounded beneath, nearly flat above, not grooved. *Corymbs* terminal, racemose, naked and simple, loose. *Bracts* none. *Peduncles* patent or spreading, tomentose, various in length, shorter, equal to or longer than the calyx, nearly erect in seed. *Flowers* very large and handsome, 1—1½ inch in diameter, delicately fragrant with the odour of cloves. *Calyx* oblong, 6 or 7 lines in length, stellately tomentose, purplish. *Sepals* linear-oblong, cohering into a tube, gibbous at the base, their tips thickened at the back, obtuse, spreading, with purplish scarioso margins. *Petals* of a fine purplish pink varying to violet-blue or lilac on the same plant, widely spreading or a little deflexed, obovato-rotundate or obcordate, slightly emarginate or nearly entire, whitish where they begin tapering into their long, narrow, greenish, firm, fleshy and upright claws, forming a pale eye in the centre of the flower. *Stamens* erect, glabrous; *filaments* of the 4 longer stamens curved or slightly ascending from the base and again approximating at top, flattened or dilated and subulate at their margins, a little concave on the inner side, tapering and slightly furrowed: shorter filaments much compressed laterally, not tapering or dilated, shorter than their anthers; *anthers* pale yellow, sagittate, lanceolate. *Hypogynous glands*,—a pair at the base of the two shorter filaments which they enclose between them, green, compressed, ascending and somewhat pointed, deciduous. *Germen* villous, oblong, compressed and tapering, equalling the two shorter stamens. *Stigma* of 2 shortly decurrent lobes.

The delicious fragrance of the wild plant, more particularly of an evening, surpasses that of the cultivated Stock or Gilliflower, of which it is the parent.

Though only of biennial growth in our gardens, the Sea Stock is certainly perennial on its native cliffs, as is evident from the remains of the seed-pods of the previous year continuing attached to the flowering branches of the current season. Besides, Jackman, an intelligent cliffsman, whom I have repeatedly employed to procure specimens from their otherwise inaccessible locality, speaks with certainty of many bushes which he has remarked for five successive years, and there are some of very large size which he believes must be at least above seven years old. From their position on the face of nearly perpendicular cliffs having a southern aspect, the plants are fully protected from North and North-east winds, and enjoy the mitigating influence of the sea air, yet they are sometimes cut off by spring frosts in seasons like the present (1845) of unusual lateness and severity.

II. CHEIRANTHUS, Linn. Wall-flower.

“*Pod* compressed or 2-edged. *Calyx* erect, 2 opposite sepals saccate at the base. *Stigma* placed on a *style* 2-lobed, the lobes patent or capitate. *Hypogynous glands* none between the longer stamens.”—*Br. Fl.*

1. *C. Cheiri*, L. *Common Wall-flower*. “*Leaves* lanceolate acute entire with bipartite appressed hairs, pods linear, lobes of the stigma patent, stem shrubby at the base.”—*Br. Fl.* p. 24. *C. fruticosus*, L.: *E. B. t.* 1934.

On old walls and roofs, rocks and cliffs by the sea, common, but I think doubtfully indigenous. *Fl.* April—June. *Fr.* June. ½.

E. Med.—Abundant on the walls and farm-buildings at Hasely [and Quarr, *Dr. Bell-Salter*, Edrs.] Common on walls at Brading.

W. Med.—On the walls of Carisbrooke castle in plenty. Frequent on walls and roofs at Yarmouth, as at the castle, &c.

Root whitish, tapering, with several long, rigid, nearly simple, slender branches, and having the hot pungent smell and taste of horseradish. *Stem* shrubby, erect or ascending, from 6 to 18 inches high, with a rough, greenish ash-coloured bark, round and in the older plants much branched from the base, forming tufts, the flowering shoots angular and downy. *Leaves* numerous, scattered and crowded on the young barren and flowering shoots, erect, narrow-lanceolate, very acute, usually quite entire or at most with one or two small teeth (*Mertens & Koch*), firm and persistent in our ordinary winters, tapering into short petioles, their tips a little recurved, with the strong midrib of the leaf continued into a pale stiffish point; covered on both sides but most thickly on the under with fine, close-pressed, centrally affixed hairs precisely like those of *Cornus*. *Flowers* in terminal, corymbose, simple clusters, of a rich golden-verging upon orange-yellow, very fragrant, on erect or patent quadrangular pedicels about their own length. *Calyx* purplish brown, the sepals erect, linear-oblong, obtuse, with yellow membranous edges, as long as or longer than the claws of the petals, 2 alternately broader, gibbous at the base and plane at the back, the remaining 2 narrower and strongly keeled, all more or less sprinkled with medifixed hairs. *Petals* much exceeding the calyx, obovate, spreading, but not flaccid nor blotched with dark brownish red as in the cultivated Wallflower, somewhat wavy and minutely notched along their margins, with long, narrow, pale claws. *Stamens* equal in length or very nearly so, erect, 4 of them opposite the smaller sepals, closely approximated in pairs, unaccompanied by hypogynous glands, the 2 solitary stamens surrounded by a dark green 4-lobed gland; *filaments* angular, not compressed nor dilated below; *anthers* linear oblong, greenish yellow. *Style* very short; *stigma* bilobate, the lobes roundish, at length spreading. *Siliques* linear, erect, $1\frac{1}{2}$ —2 inches long, acutely 2-edged and compressed, with a very short beak and tipped with the stigma, grayish with close-pressed medifixed hairs, each valve with a narrow acute dorsal keel. *Seeds* numerous in each cell, brownish yellow, rugose, in a single row from either edge of the dissepiment, ovate or suborbicular, much compressed, with a broad membranous margin most prominent at the lower end. *Cotyledons* accumbent, flat, the radicle curved upwards towards the funiculus.

III. NASTURTIIUM, *R. Br.* Cress.

“*Pod* nearly cylindrical (sometimes short); *valves* concave, neither nerved nor keeled. *Seeds* in a double row. *Calyx* patent.”—*Br. Fl.*

† *Petals white.*

1. *N. officinale*, *R. Br.* *Common Water-cress*. “*Leaves* pinnate, leaflets ovate subcordate sinuato-dentate, petals (white) twice as long as the calyx, pods linear.”—*Br. Fl.* p. 27. *Sisymbrium Nasturtium*, *L.*: *E. B. t.* 855.

In wet ditches, about spring-heads and on the plashy margin of brooks, ponds and rivers, abundantly. *Fl.* May—October, or even later. 24.

†† *Petals yellow.*

2. *N. terrestre*, *R. Br.* *Marsh Cress. Annual Yellow Cress*. “*Leaves* lyrato-pinnatifid unequally toothed, root simply fibrous, petals not longer than the calyx, pods oblong turgid and the septum 2—4 times longer than broad.”—*Br. Fl.* p. 28. *N. palustre*, *DC.* *Sisymbrium terrestre*, *E. B. t.* 1747.

In wet meadows, on ditch-banks and the muddy margins of ponds, &c., rare. *Fl.* June—October. ☉.

E. Med.—In a moist spot by Whitefield farm but in very small quantity. In considerable plenty on the half-dried-up margin of the pond at Hardingshoot farm, along with *Chenopodium rubrum*. In the farmyard at the Grove, Adgeston. In several parts of Sandown Level but always sparingly. Close by the bridge at Langbridge by Newchurch. On the swampy border of the pond at Ninham by Ryde.

Root very white and fleshy, emitting numerous long, stout, flexible, simple or branched fibres. *Stem* 1 or many, so as often to constitute a bushy herb, from a few inches to about a foot and a half high, erect or procumbent, alternately branched, the branches patent, hollow, green or purplish, deeply furrowed and acutely angular, somewhat wavy, smooth, glabrous and shining. *Leaves* numerous, alternate, glabrous, those at the root crowded and spreading in a circular caespitose tuft; deeply lyrate-pinnatifid or pinnatisect, of from 2 to 6 pair of oblong or lanceolate, opposite, subopposite or alternate, rather wavy segments that are coarsely, unequally and for the most part obtusely sinuato-dentate and serrate, the serratures mucronate; diminishing in size as they descend, confluent by their anterior basal margins, which are produced along the midrib into a narrow wing continued downwards to the base of the leaf, forming the rather long, channelled, semiterete *petioles* that are dilated at bottom into a pair of small, acute, clasping *auricles* most evident on the superior leaves; terminal lobe of the lower leaves roundish or ovate, of the higher oblong or lanceolate, sinuately toothed and serrate like the rest and often somewhat lobed: the winged margins of the petioles have frequently a few scattered bristly hairs towards the base of the stalk. *Flowers* very minute, in small axillary and terminal corymbose and leafless clusters that gradually elongate and become racemose in seed. *Pedicels* terete, glabrous, ebracteate. *Calyx* greenish yellow; *sepals* oblong, concave, faintly 3-ribbed. *Petals* not exceeding the calyx in length or shorter, pale yellow, obovate, veined, attenuated into narrow claws, entire or with a shallow emargination. *Stamens* nearly equal. *Hypogynous glands* 6, green, 2 close on each side of the shorter pair of stamens, oblong, compressed, directed upwards; and 1 between each combined or longer pair, smaller. *Style* extremely short and thick; *stigma* broad, peltate, a little convex, glanduloso-pilose, faintly 2-lobed. *Siliques* in long, erect, racemose clusters on the now spreading or partly declinate pedicels, 3 or 4 lines in length, glabrous, oblong-elliptical, turgid, a little compressed horizontally, mostly somewhat incurved or nearly straight, very obtuse, tipped with the style. *Seeds* very numerous and minute, pale reddish brown, roundish ovate, compressed, notched and foveate by the bent form of the cotyledons within, thickly covered with vesicular prominences under a high magnifier.

IV. BARBAREA, R. Br. Winter-cress.

"*Pod* 4-angled and somewhat 2-edged; *valves* with a middle nerve. *Seeds* in a single row. *Calyx* erect, equal at the base. *Glands* between the shorter filaments and the germen, and a subulate one between each pair of the longer ones."—*Br. Fl.*

1. *B. vulgaris*, R. Br. *Common or Bitter Winter-cress. Yellow Rocket. French Cress.* "Lower leaves lyrate, the terminal lobe rounded, the superior ones obovate toothed often pinnatifid at the base, style about as long as the ovary distinct straight, pods linear tereti-angled acuminate."—*Br. Fl.* p. 24. *Erysimum Barbarea*, L.: *E. B.* t. 443.

On moist hedge- and ditch-banks, by roadsides, the borders of fields, and along streams, not uncommonly. *Fl.* May.

E. Med.—About Ryde, occasionally. In a field at the back of St. John's fruit-garden. Along the brook between Little Smallbrook and St. John's turnpike. Banks of the marsh-ditches in Sandown Level, frequent. Sandown village. By the stream-side between French mill and Baverstone or Bobberstone. Alverstone bridge and by the stream at Weeks's, *Dr. Bell-Salter*.

W. Med.—Plentiful by the roadside between Wilmingham and Afton farms, Freshwater. In a ditch of the marsh-meadows of Gurnet bay. In various places about Brixton, near White-Court farm; moist hedgebanks and drains near the Grange, &c.

Var. β . Pods and their pedicels erect and in part appressed, somewhat oblique, smaller than in the common state of the plant. An *B. stricta Andr.*? Very sparingly by the roadside between Newbridge and Calbourne (a few plants only).

Herb quite glabrous in every part. Root whitish, somewhat woody, tapering, with several long stout fibres. Stems erect, pale green or sometimes purplish below, from 18 inches to 2 feet or more in height, solid, stout, angular, deeply furrowed, with sharp intermediate edges, simple or branched sometimes from the base, the branches alternate, erecto-patent, long and slender. Leaves somewhat fleshy, very smooth and shining, alternate, strongly veined and waved or blistered: radical and lower stem-leaves large, 6 or 8 inches long, lyrato-pinnatifid; the lobes ovate, roundish or oblong, distant and diminishing as they approach the base of the leaf, with mostly several smaller intermediate lobules, entire, sinuate, waved or slightly toothed, the terminal lobe very large, ovate, rounded or cordate at the base, the petioles winged at their origin: upper stem-leaves shorter, less regularly and deeply pinnatifid, the lobes fewer, narrower, the terminal one more deeply sinuate, clasping by their almost sagittate bases; the uppermost leaves obovate, scarcely divided, deeply sinuato-dentate, clasping. Flowers numerous, bright yellow, in round-topped corymbose clusters, on 2-edged pedicels about as long as the calyx, spreading or slightly decurved, when in fruit nearly erect, bracteate. Calyx erect, the sepals nearly equal in height, tapering and somewhat pointed, greenish yellow, caducous, with thickened concave tips, the two broader ones gibbous at the base, the two narrower slightly keeled. Petals much longer than the calyx, oblongo-obovate, entire, slightly emarginate or wavy at their extremity, tapering into pale narrow claws, the limb spreading. Stamens upright, the longer pair with an oblong, green, porrected gland, flattened below, gibbous on the upper side between and exterior to them at their base, the shorter filaments each with a much smaller, vertically compressed gland on either side of their ascending bases; anthers yellow. Style distinct, straight, a little thickened upwards, often inclining to one side; stigma sessile, capitate, glandular. Siliques in long clusters, very numerous, crowded, glabrous, erect and partly appressed, on short pedicels that diverge at an angle of about 22° from the stem; about an inch in length including the distinct, slender, straight and permanent style, which is nearly an eighth of the whole, compresso-quadrangular and 2-edged, the valves strongly keeled and veiny. Seeds numerous, exactly like those of the next species but much smaller.

A handsome double-flowered variety is frequent in gardens, and it is sometimes grown as an early spring salad, though much inferior to the next species for this purpose, from its bitterness and comparative want of pungency.

2. *B. præcox*, R. Br. *Early Winter-cress. American or Belle-isle Cress. Vect. Land Cress.* "Lower leaves lyrate, upper ones pinnatifid, segments linear oblong entire, style much shorter than the ovary almost obsolete bent to one side, pods linear obtuse compressed."—*Br. Fl.* p. 24. *Erysimum*, *E. B.* t. 1129.

In cultivated fields, woods, waste places, and on hedgebanks, very frequent. *Fl.* March—October. ♂.

E. Med.—Fields about St. John's, very common. Between Seagrove and the Priory. Woody ground between Quarr abbey and Ninham. Woods about Cowes, at which place it has over-run the ground on the site of the new buildings. About Sandown. Field near Fern hill, on the left of the footway from thence to

Little Town, in great plenty. At Fishbourne. In a field close to Uplands near Ryde, in great abundance, *Dr. Bell-Salter*. Between Quarr abbey and Fish-houses. About Landguard farm and elsewhere near Shanklin very commonly, and where I have seen fields sometimes quite yellow with it.

W. Med.—Northwood park, plentiful, *Miss G. Kilderbee*.

The whole plant quite glabrous, 1—2 feet in height. *Root* white, tapering, in the larger plants much branched, slightly pungent. *Stem* erect, sharply angular, furrowed, branching from the base in old and luxuriant plants, with many erect branches; in the smaller often nearly simple, purplish below. *Radical leaves* numerous, spreading in a circle, lyrato-pinnatifid, their lobes roundish, waved fleshy and shining, the terminal one much the largest, roundish, bluntly notched or lobed, the lower ones entire or nearly so: *stem-leaves* pinnatifid, their lobes becoming narrower as they ascend, and on the uppermost leaves nearly linear; the lowermost lobe in all is clasping, and produced into an auricle fringed with a few stiff hairs. *Flowers* erect, bright yellow, in constantly elongating corymbs very like those of the last species. *Sepals* equal, oblong, obtuse, concave and erect, at first greenish, afterwards yellow, broader and more rounded than in the last. *Hypogynous glands* 6, namely, one on each side of the two shorter filaments at their base, larger, paler and horizontal, and another on the outside of the two pair of longer filaments, smaller, deep green and nearly erect. *Style* extremely short, not $\frac{1}{2}$ a line in length, always bent to one side: *stigma* flat roundish and simple. *Siliques* very long (2—2 $\frac{1}{2}$ inches), far less crowded than in *B. vulgaris*, erecto-patent, on short stalks that diverge at an angle of about 45°, slender, straight, ancipiti-quadrangular, the valves with a strong dorsal keel, glabrous and wrinkled, tipped with the very short obtuse and oblique style. *Seeds* numerous (often 20 or more in each cell), pendulous, in 2 rows, brownish or yellowish, with darker edges, somewhat orbicular, plane on their outer side, gibbous and bluntly angular on that next the thin membranous dissepiment, covered with depressed pellucid dots, and hence appearing reticulated, twice as large as the seeds of *B. vulgaris*.

This species is generally thought to have been introduced to Europe from the New World, whence the names of American or Belleisle Cress (from the Straits of that name between Labrador and Newfoundland). Be that as it may, no plant is more thoroughly naturalized amongst us than the present, and in no part of Britain perhaps does it abound more than in this island. In America *B. præcox* extends beyond the Arctic Circle. It affords an excellent spring salad, very superior to the common Winter Cress, as was remarked to me by my friend the Rev. Wm. Darwin Fox, who, having been accustomed to the use of the latter in Derbyshire, on coming to reside in this island having unknowingly substituted the former and more abundant species here, though puzzled to account for the difference, was immediately sensible of having made an exchange for the better. The taste is much more pungent and cress-like, and Mr. R. Loe of Newchurch tells me it is often substituted by the people of this island for the common Water Cress, being known by the opposite cognomen of Land Cress.

V. ARABIS, Linn. Rock-cress.

“*Pod* linear, compressed, crowned with the nearly sessile *stigma*; valves nerved or coarsely veiny. *Seeds* in one row. *Calyx* erect.”—*Br. Fl.*

1. *A. hirsuta*, R. Br. *Hairy Rock-cress*. “Leaves all hispid dentate, cauline ones semi-amplexicaul, pods erect straight, their valves 1-nerved.”—*Br. Fl.* p. 25. *Turritis*, L.: *E. B.* t. 587.

On dry banks, walls and rocks, rare. *Fl.* May—August. 24. (♂. Hook.)

W. Med.—Area of Carisbrooke castle. In the fosse of Carisbrooke castle on the N. side, and elsewhere (within the walls), in some plenty. Carisbrooke-castle hill, and High Down by Freshwater, *Mr. Dawson Turner* in B. T. W., in which

last station I find it sparingly, 1841 !!! In very great abundance and luxuriance on a high sloping field or bank at the West end of Whitepit (chalk-pit), Newport.

Root whitish, tapering, very rigid, usually much branched, biennial, or according to others perennial. It is certainly perennial with us, as the dried remains of the last year's flowering and still attached stems sufficiently testify. *Stem* 1 or 2, seldom except where the main stalk is broken off more numerous, from about 12 to 18 inches or 2 feet in height, simple or more rarely slightly branched above, the branches upright, round, slender, rigid, leafy, erect, often flexuose and recurved at the summit, hispid beneath with copious spreading and deflexed, simple or partly forked white hairs, above either quite glabrous or nearly so. *Leaves* numerous, hispid like the stem and fringed with simple or forked hairs, *radical* ones nodulate, oblong, elliptical-oblong or obovate-oblong, sometimes inclining to oblong-lanceolate or spatulate, scabrous with the tubercular bases of the hairs, entire or with a few distant, shallow, tooth-like serratures; *stem-leaves* numerous, erect but not appressed, sessile, truncate or subsagittate at base, at other times rounded or slightly cordate, their margins often a little deflexed, usually with a rudimentary branch and abortive raceme in the axil of each; the inferior leaves mostly as hairy as those at the root, and entire or more or less toothed about the middle, never near the apex, gradually narrowing as they ascend and becoming less hairy, the highest sometimes quite glabrous and shining excepting the marginal fringe, very narrow, linear and acute. *Flowers* small, white, in constantly elongating racemes; *pedicels* shorter the calyx, patent and glabrous. *Sepals* erect, purplish green, their margins white, bluntish, the 2 alternate ones oblong, a little gibbous at the base, the other 2 narrower. *Petals* linear-oblong or obovate-oblong, tapering into the claw, considerably exceeding the calyx, spreading, entire or obsoletely emarginate. *Stamens* erect, longer than the germen. *Hypogynous glands* green, 6, one surrounding each of the two shorter filaments and bilobate, another much smaller and roundish, one behind each of the longer stamens. *Germen* terete, subcompressed. *Style* obsolete; *stigma* round, flat, glanduloso-pilose. *Siliques* linear, very erect, 1—1½ inch in length, by about ¼ a line in breadth, compressed, beaded by the projection of the seeds within, shining, wrinkled and glabrous, with a more or less distinct ridge or keel along the centre of each valve, crowned with the stigma. *Seeds* numerous, uniserial, oblong-elliptical or subquadrangular, flattened mostly on the outer side, the inner a little convex, reddish brown, with a darker narrow margin which is often a little expanded at the lower extremity of the seed, punctate-scabrous, as broad as the dissepiment.

VI. CARDAMINE, Linn. Bitter-cress.

"*Pod* linear, the *valves* flat, generally separating elastically, nerveless. *Seed-stalks* slender."—*Br. Fl.*

1. *C. pratensis*, L. *Common Bitter-cress. Ladies'-smock. Cuckoo-flower.* "Leaves pinnate, radical leaflets roundish dentate, cauline ones lanceolate nearly entire, style straight, stigma capitate, petals obovate."—*Br. Fl.* p. 26. *E. B.* t. 776.

In moist woods and meadows, abundantly. *Fl.* April—June. 24.

"*Stem* 1—2 feet high. *Flowers* large, blush-coloured."—*Br. Fl.*

A variety with unusually large flowers I find in Howingford withy-bed at its northern end, in very boggy ground.

I found, May 28, 1845, in a moory meadow by the Medina, below Rookley, a solitary specimen of *C. pratensis*, affording a singular instance of abnormal development. On the lower part of the corymb were several seed-vessels on pedicels changed from their usual linear to an ovate-elliptical figure, so as to resemble the short fruit of plants belonging to the siliculose section of this order. These on being opened were found to contain petals of the usual colour, which in the pods above had burst from their confinement, and appeared as semidouble flowers, the valves of the pod answering to the true calyx. At the summit of the stem the

flowers had the usual appearance, except that the stamens were changed into petals; and on opening the ovarium of the highest blossom no ovules were discoverable amongst the mass of petaloid laminæ with which the cavity was filled. The lowermost pedicellate pods had doubtless been at first surrounded by the regular floral envelopes, but from some cause had not emitted them at the sutures like the rest. From their verticillate arrangement it is evident that these petaloid expansions were not transformed seeds, but simply a development of the common axis within the ovary into an abortive whorl of floral organs, besides which there were evident rudiments both of stamens and germen in the centre of the bundle.

2. *C. hirsuta*, L. *Hairy Bitter-cress*. "Leaves all pinnate without auricles, radical leaflets roundish-angled or toothed petiolate, stem-leaflets narrower nearly sessile, petals oblong, stigma blunt, pods erect."—*Br. Fl.* p. 27.

On hedgebanks, walls, rocks, in woods and moist shady places, abundantly. *Fl.* March—August. ☉.

From 3 inches to a foot high, according to the wetness of the situation. The whole plant, especially the root, has an extremely strong pungent smell of Horseradish, and might if cultivated furnish an excellent salad-herb and antiscorbutic. Not uncommonly the plant is quite smooth except a fringe of hairs along the edge of the leaves.

VII. HESPERIS, Linn. Dame's Violet.

"Pod 4-sided or 2-edged. Stigma nearly sessile; the lobes elliptical, connivent. Calyx erect."—*Br. Fl.*

1. *H. matronalis*, L. *Common Dame's Violet*. "Stem erect, leaves ovato-lanceolate toothed, limb of the petals obovate, pods erect torulose, their margins not thickened."—*Br. Fl.* p. 33. *H. inodora*, L.: *E. B.* t. 731.

In meadows and pastures, very rare and probably the outcast of gardens. *Fl.* May—July. ☿.

E. Med.—Near Bonchurch, sparingly, *Mr. D. Turner* in B. T. W. I have not succeeded in finding the plant at the above station, but my friend Mr. Curtis has gathered specimens there within these few years, from whence his drawing in *Br. Entom.* was taken.

VIII. SISYMBRIUM, Linn. Hedge Mustard.

"Pod rounded or 6-angular; valves convex or 3-angled 3-nerved (rarely with the lateral nerves inconspicuous or wanting). Hypogynous glands none between the longer filaments. Seeds smooth, their stalks slender. Stigma entire. Calyx spreading, equal at the base."—*Br. Fl.*

1. *S. officinale*, Scop. *Common Hedge Mustard*. "Pods subulate pubescent close-pressed to the main stalk, leaves runcinate hairy, stem hispid."—*Br. Fl.* p. 34. *Erysimum*, L.: *E. B.* t. 735.

In waste places, by waysides and along hedges, very common. *Fl.* June, July. ☉.

2. *S. thalianum*, Gaud. *Thale Cress*. "Leaves somewhat toothed downy, radical ones oblong subpetiolate, stem branched, pods ascending terete with 4 angles."—*Br. Fl.* p. 34. *Arabis*, L.: *E. B.* t. 901.

In waste and cultivated ground, on wall-tops, and dry banks, abundantly. *Fl.* Spring and autumn. ☉.

Fields about Quarr abbey, on the abbey-walls, and elsewhere about Ryde. A weed in cornfields about Cowes, and in most other parts of the island.

Root whitish, of several tapering and branched fibres. *Stem* from about 5 or 6 to 12 inches high, solitary or with several shorter and slightly spreading ones springing in a circle around the main stalk, terete, wavy, glaucous or purplish, hispid below with white, spreading, stiff hairs, above glabrous, and in the larger plants with long, slender, patent branches, which like the secondary or outer stems are quite simple or very nearly so. *Leaves* mostly crowded into a dense radical tuft, from about 1 to 2 inches in length, oblong-lanceolate, oblong-elliptical or subspathulate, obtuse or slightly pointed, attenuated into a petiole, more or less unevenly sinuato-dentate or nearly entire, often reddish or purplish, in dry situations rough all over with rigid forked hairs from tubercular bases; *stem-leaves* few, distant, smaller, lanceolate or linear, sessile, nearly or quite entire. *Flowers* small, in a constantly elongating corymb which is somewhat lax or drooping at the summit. *Sepals* erect, oblong-elliptical, concave, not keeled, glabrous, or with a few hairs at the summit, the alternate ones somewhat pointed and narrowed, the others very obtuse. *Petals* about twice as long as the calyx, obovate, attenuated into greenish yellow slender claws, the limb white, entire, at length moderately spreading. *Hypogynous glands* one at the base of each stamen, small, roundish oblong, those under the 2 shorter filaments much larger and more prominent than the rest. *Siliques* on the now widely diverging pedicels, about 8 or 9 lines in length, a little curved inwards and upwards, or ascending, tipped with the styles, pale yellowish, reddish or purplish, glabrous, hardly $\frac{1}{2}$ of a line in breadth, ancipital, the valves with a filiform keel or ridge running their entire length. *Seeds* numerous, very minute, like grains of red sand in size and colour, of an ovate-oblong or roundish figure, somewhat compressed and lobed by the form of the cotyledons, a little rough or uneven.

IX. ALLIARIA, *Adans.* Garlick Mustard.

"*Pod* rounded; *valves* with one conspicuous nerve and two slender branched nerves or veins. *Hypogynous glands* between the longer filaments. *Seeds* striated, their *stulks* flat and winged. *Stigma* entire. *Calyx* slightly spreading, equal at the base."—*Br. Fl.*

1. *A. officinalis*, L. *Common Garlick Mustard. Jack by the Hedge. Sauce-alone. Garlic Treacle Mustard. Br. Fl.* p. 35. *Erysimum Alliaria*, L.: *E. B.* t. 796.

Common in moist shady places, along hedges, lanes and roadsides. *Fl.* April—June. ♂. Hook., ☉. Sm., ♀. Gaud.

Obs.—*Erysimum cheiranthoides*, L., grows just within the lodge-gate leading to Mrs. Goodwin's house at W. Cowes, but has the appearance of having been sown there for an ornamental border-flower.

X. BRASSICA, *Lin.* Cabbage, &c.

"*Pod* 2-valved (with a sterile, or one- or several-seeded beak). *Seeds* in a single row. *Calyx* erect."—*Br. Fl.*

1. *B. oleracea*, L. *Common or Sea Cabbage.* "Root caulescent cylindrical fleshy, all the leaves glabrous glaucous waved and lobed, upper ones oblong sessile."—*Br. Fl.* p. 39. *E. B.* t. 637. *Fl. Dan.* xii. t. 2056.

On rocks and cliffs by the sea, rare. *Fl.* May, June. ♂.

E. Med.—Ventnor? at the foot of the cliff, a single specimen, perhaps escaped from cultivation. Also in Sandown bay, a single specimen at the foot of the cliffs. Sparingly on the tufa-rock just below Ventnor mill, close to where the water discharges itself on the beach, as previously observed by the *Rev. G. E. Smith*. [Abundant on the crumbled chalk at the foot of Culver cliff, *A. G. More, Esq., Edrs.*]

W. Med.—At Brook, near the Chine, a single specimen of what could only be this species neither in fruit nor flower, therefore in its first year of growth, I found on the steep sea-bank as above.

Root tapering, rising above the surface to the height of several inches as a rounded, woody, scarred stem, leafy at the summit and branching into several erect, herbaceous, round and smooth stalks that are again more or less branched. *Leaves* smooth, thick, fleshy, very glaucous, those of the root and first year's shoots large, lyrate or from the great development of the terminal lobe roundish, stalked, waved and entire at the margin: *stem-leaves* alternate, undivided, erect, variable in shape, oblong or oblong-lanceolate, cordate and semiamplexicaul, quite sessile, serrato-dentate, bluntish, the uppermost ones sometimes nearly entire. *Flowers* in elongating corymbs, large, erect, bright lemon- verging upon golden-yellow. *Sepals* nearly erect, smooth, equal, closely joined below, concave and obtuse. *Petals* roundish, much longer than the calyx, spreading, with long tapering claws. *Stamens* erect, very unequal, the 4 longer ones as high as the style, the 2 shorter about $\frac{1}{2}$ less: *anthers* yellow. *Hypogynous glands* 4 green ones on the outside of each combined pair of stamens, oblong and suberect, the other 2 within the solitary stamens at their ascending bases, roundish. *Style* long, cylindrical, often a little inclined to one side; *stigma* round, flattened, with a transverse chink or furrow, hence slightly lobed. *Pods* erect, linear, tapering, quite smooth, a little compressed and incurved, crowned by the permanent style, but without any beak properly so called, though the final enlargement of the style downwards gives it the appearance of having one.

2. *B. Napus*, L. *Wild Navew, Rape, or Coleseed*. "Leaves glabrous somewhat glaucous especially on the under side, lower ones lyrate toothed, upper cordato-lanceolate amplexicaul, pods spreading."—*Br. Fl.* p. 39. *E. B. t.* 2146.

Common in cultivated land, amongst corn, clover, &c. and in waste ground. *Fl.* May, June. ♂.

XI. SINAPIS, Linn. Mustard.

"Pod 2-valved (with a sterile or one- or several-seeded beak). *Seeds* in a single row. *Calyx* patent."—*Br. Fl.*

1. *S. nigra*, L. *Common or Black Mustard*. *Vect. Warlock*. "Pods appressed glabrous tetragonous, beak sterile short subulate, upper leaves linear-lanceolate entire glabrous."—*Br. Fl.* p. 40. *E. B. t.* 969. *Brassica*, Koch.

On ditch-banks, waste ground, along hedges and roadsides, not unfrequently. *Fl.* May—September. *Fr.* October. ☉.

E. Med.—Abundant along the beach between Ryde and Binstead. In Binstead stone-pits. Abundant on ditch-banks in the Dover marshes and on the shore a little E. of Ryde. Plentiful at Carpenters near St. Helen's. Abundant at the foot of Shanklin chine. In Sandown bay with *S. alba*, sparingly. Abundant on the Dover in 1841. [*Bembridge, A. G. More, Esq., Edrs.*]

W. Med.—About Yarmouth and Norton, *B. T. W.*

Taller and more spreading than the next species, the herbage of a deeper shining green, and flowers of a brighter yellow, with a slight delicate fragrance, as remarked to me by Dr. Bell-Salter.

Stem 3—4 feet high, with copious smooth slender branches. *Lower stem-leaves* very large, lyrate, the terminal lobe roundish, very rough on both sides, but occasionally glabrous, dark green, those above more or less approaching to entire, the uppermost mostly quite so, stalked and pendant. *Flowers* smaller than in the two following species, golden yellow. *Sepals* linear, coloured, widely spreading, their edges involute, scarcely longer than the slender claws of the rounded entire *petals*. *Hypogynous glands* greenish. *Pods* in long clusters, linear, erect, closely applied to the stem or partly a little patent, from $\frac{1}{2}$ an inch to an inch in length, brownish, pedicellate, glabrous, tetragonous, the 2 dorsal angles more sharply keeled than the sutural, and hence the siliques appear 2-edged, abruptly terminating in the short, straight, narrow beak or rather style, tipped with the 2-lobed stigma. *Seeds* mostly 4 in each cell, ovato-globose, clear brown, minutely punctate all over.

2. *S. alba*, L. *White Mustard*. "Pods hispid turgid shorter and slightly narrower than the flat ensiform beak, leaves pinnatifid."—*Br. Fl.* p. 41. *E. B. t.* 1677.

In cultivated ground, waste places, on banks and by roadsides, chiefly in the East and South-east parts of the island, not unfrequent. *Fl.* May—July. ☉.

E. Med.—About Ryde. Plentiful all about Ventnor. In Sandown bay on steep sea-banks, also between the bay and Yaverland. Shanklin chine.

W. Med.—Cowes. Freshwater, *B. T. W.*

Root hard, white, tapering, sometimes copiously branched, and with many woolly fibres. *Stem* erect, from 1—3 feet high, much branched, hollow, angular and deeply furrowed, purplish below, hispid with deflexed bristly hairs. *Leaves* all lyrate or lyrate-pinnatifid, roughish, various in size and in the shape of the lobes, which are usually 5—7 cut or toothed, terminal one usually confluent with the next pair beneath it, the lower ones much smaller and quite distinct. *Flowers* numerous, rather large, bright yellow. *Siliques* in long racemose clusters, stalked, the lower ones spreading, those towards the summit somewhat erect or patent, whitish brown, about $1\frac{1}{2}$ inch long; valves tumid or beaded, hispid with short bristles pointing forward, and copious very minute reflexed ones, each valve with 5 strong prominent ribs, and one or two less distinctly marked. *Beak* usually much longer than the valves, ensiform, curved upwards or sometimes nearly straight, flat, with thin sharp edges, 3-ribbed on each side, rough but less so than the valves, and tipped with the stigma. *Seeds* 2—4 in each cell (rarely more than 3) and very commonly one in the base of the beak, globular, scabroso-punctate, various in colour, pale reddish, whitish or blackish brown and mottled.

3. *S. arvensis*, L. *Charlock*. *Wild Mustard*. "Pods glabrous with many angles turgid and knotty longer than the slightly compressed beak, stem and leaves bristly."—*Br. Fl.* p. 41. *E. B. t.* 1748.

In waste and cultivated ground but too abundant; an odious weed in tillage-land. *Fl.* May—August. ☉.

"*Stem* 1—2 ft. high rough. *Flowers* rather large yellow. *Calyx* very spreading. *Beak* of the pod usually empty, sometimes with one seed."—*Br. Fl.*

Suborder II. SILICULOSÆ.

Fruit a short broad pod or pouch (Silicule).

* *Pouch 2-valved, dehiscent.*

Division I. LATISEPTÆ.

Pouch short, opening with two flattish or convex valves; dissepiment broad in the major transverse axis of the fruit.

Tr. Alyssinæ. Cotyledons 0=.

XII. KONIGA, Adans. Koniga.

"*Pouch* subovate; *valves* nearly plane; *cells* 1-ovuled and 1-seeded; *seed-stalks* with their base adnate to the dissepiment. *Calyx* patent. *Petals* entire (white). *Hypogynous glands* 8! *Filaments* simple."—*Br. Fl.*

*1. *K. maritima*, R. Br. *Sea-side Koniga*. *Sweet Alyssum*, Hort. *Br. Fl.* p. 30. *Alyssum*, Willd.: *E. B.* t. 1729. *Clypeola*, L.

Naturalized occasionally on walls, cliffs, and waste ground near the sea, from adjoining gardens. *Fl.* August, September. 24.

E. Med.—[Morton Shute, Dr. Bell-Salter, Edrs.]

W. Med.—In a lane at West Cowes.

XIII. DRABA, Linn. Whitlow-grass.

"*Pouch* or *pod* entire, oval or oblong; *valves* plane or slightly convex, 1-nerved at the base, nerved or veiny upwards; *cells* many-seeded. *Seeds* not margined. *Filaments* simple."—*Br. Fl.*

1. *D. verna*, L. *Common Whitlow-grass*. *Scapes* leafless, petals deeply cloven, leaves somewhat toothed hairy. *Br. Fl.* p. 30. *E. B.* ix. t. 586.

Var. *a.* Leaves lanceolate, tapering into the petiole.

Var. *β.* Leaves very broad. *D. verna*, var. *Krockeri*, Andr., *Reichb. Iconog.* xii. t. 12, fig. 4234.

On walls, banks, dry pastures and waste ground, abundantly. *Fl.* March, April. ☉.

On the Dover, Ryde. St. Helen's spit, &c., abundantly.

a. The Dover, on an embankment, with *β.*

Herb extremely variable in size and luxuriance, often barely an inch high, with a single flower-stalk, at other times 4 or 5 inches and with very numerous scapes. *Root* very slender, whitish, with a few thready fibres. *Leaves* spreading in a radical tuft, very variable in breadth, from linear-lanceolate to very broadly ovate, tapering, gradually or suddenly contracted into the petiole, with every intermediate gradation between these extremes, somewhat fleshy and shining, clothed with a pretty copious forked or starry pubescence, especially on the upper side and along their edges, and mostly having a few shallow distant teeth towards their points. *Scapes* round, simple, hairy below, smooth above, sometimes hairy or smooth throughout, terminating in a corymbose cluster of small white flowers on pedicels greatly lengthened after the blossoms are past. *Sepals* roundish ovate, concave, obtuse, purplish, with white membranous borders, sometimes a little hairy. *Petals* much longer than the calyx, inversely heart-shaped, cloven half way down, their claws greenish. *Stamens* enlarged at the base, with a cellular gibbosity on their upper side. *Hypogynous glands* small, green, in pairs, one on each side the two solitary *filaments*, which are all nearly equal in length, though those just mentioned appear shorter, from curving outwards at their base. *Germen* ovate, compressed. *Style* scarcely any; *stigma* broad, flat. *Pouch* elliptical or ovate-oblong, smooth, much compressed (sometimes in alpine situations swollen, Hook.), brownish when ripe, tipped with the permanent stigma. *Seeds* numerous, oval, pale brown, warted.

I do not find any figure of the broad-leaved var. The very indifferent one of Krocker, Sil. ii. tab. 28, referred to by Reichenbach in *Fl. Germ. enum.*, is not at all expressive of our *β.*

One of the earliest plants that greet the eye in spring, with its small, white, but

at that season not inconspicuous blossoms, is the little vernal Whitlow-grass, flowering even before *Cardamine hirsuta* and *Barbarea præcox*, species that anticipate most others of the order to which they belong in the period of inflorescence.

XIV. COCHLEARIA, Linn. Scurvy-grass.

"Pouch oval or globose, many-seeded; the valves turgid, with a prominent nerve in the middle. Filaments simple. Hypogynous glands 4. Seeds not margined, tuberculate. Calyx patent."—*Br. Fl.*

1. *C. officinalis*, L. *Common Scurvy-grass*. "Pouch globose, radical leaves petiolate cordato-reniform entire or sinuated, cauline ones sessile oblong sinuated."—*Br. Fl.* p. 29. *E. B.* t. 551.

On muddy sea-shores, and about the mouths of tide-rivers. *Fl.* April—June. ☉ or ♀.

W. Med.—Two or three plants found on the bank, with *C. danica*, by the entrance-gate into Watcombe bay on High down, Freshwater gate, a little above Plumbley's hotel.

2. *C. grænlandica*, L. *Greenland Scurvy-grass*. "Pouch globose, leaves kidney-shaped (or cordate) fleshy entire, uppermost oblong."—*Br. Fl.* p. 29. *E. B.* t. 2403. *C. officinalis*, β . *Hook.*

Sea-shores. *Fl.* June, July. ☉.

W. Med.—Edges of Freshwater down, *Rev. G. E. Smith*.

3. *C. anglica*, L. *English Scurvy-grass*. "Pouch elliptical (large) veiny, radical leaves petiolate ovate or oblong entire mostly acute or tapering at the base sometimes subcordate, cauline leaves mostly sessile oblong sinuated or with a few coarse teeth."—*Br. Fl.* p. 29. *E. B.* t. 552.

In similar situations with *C. officinalis*. *Fl.* April, May. ☉.

E. Med.—Along the embankment in Brading harbour, frequent.

W. Med.—Yarmouth, *Mr. Snooke*.

A perfectly smooth herb like the last. Root whitish, tapering. Stems numerous, 3 or 4 inches to about a foot or upwards in height, the outer often spreading, ascending or decumbent at the base, the central ones erect and like the leaves often purple, strongly angular and furrowed. Radical leaves on long footstalks, soon decaying, either ovate, cordate at the base and quite entire as in *E. B.*, or as in the specimens before me attenuated into the petiole, and for the most part distinctly waved, sinuate or bluntly toothed; stem-leaves oblong, sessile, or in the lowermost shortly petiolate, sinuato-dentate, those at and towards the summit shorter, smaller, broader and somewhat amplexicaul.

4. *C. danica*, L. *Danish Scurvy-grass*. "Pouch ovato-elliptical veiny, leaves all petiolate nearly deltoid."—*Br. Fl.* p. 29. *E. B.* t. 696.

On muddy and stony sea-shores, also on cliffs and banks by the sea, very rare. *Fl.* April—June. *Fr.* May, June. ☉.

W. Med.—Abundant for many yards on an earthen fence by the second stile on the ascent of Freshwater down. Near the Needles. High Down, and Weston down by Freshwater, *Mr. Dawson Turner*, *B. T. W.*, and the *Rev. G. E. Smith* in litt.

Herb pale green, brittle and succulent, quite glabrous. Root whitish, slender, tapering, more or less branched and fibrous. Stems numerous, prostrate and spreading in all directions, when growing amongst other plants somewhat erect or

reclining, from 2 or 3 inches to a foot in length, acutely angular, deeply grooved, twisted, sometimes bluish purple at base, more or less divaricately branched. *Leaves* nearly all stalked, very small, thick and succulent, those at the root and lowermost part of the stem simply cordate or roundish, entire or very slightly lobed, obtuse, on very slender petioles; those higher up cordato-ovate, subdeltoid, shallowly and bluntly 3—5 lobed and angled, on gradually tapering footstalks; the highest of all cordato-triangular, acutely 3-lobed and pointed, from very shortly stalked to nearly or quite sessile; sometimes ovato-oblong and undivided. *Racemes* simple, terminal, naked, at first corymbose, afterwards elongated as the flowering advances. *Pedicels* (in fruit) patent or divaricate, about a quarter of an inch in length. *Bracts* none. *Pouches* small, greenish, smooth, in short clusters on patent pedicels, ovato-elliptical when viewed from the back of either cell, broader at the base when seen in the axis of the dissepiment, scarcely at all compressed, and in my specimens very obscurely veined even when looked at against the light, tipped with the very short style. *Seeds* 4—6 in each cell, reddish brown, roundish or ovate, rough all over with coarse blunt granulations.

XV. ARMORACIA, *Fl. Wett.* Horse-radish.

“*Pouch* elliptical or globose, many-seeded; the *valves* turgid, not nerved. *Filaments* simple. *Hypogynous glands* 6. *Seeds* not margined. *Calyx* patent.”—*Br. Fl.*

*1. *A. rusticana*, *Fl. W.* *Horse-radish.* “Radical leaves oblong on long footstalks crenate, cauline ones elongato-lanceolate serrate or entire, root long cylindrical, petals (white) twice as long as the calyx, pouch 2—3 times shorter than the pedicel, stigma peltate.”—*Br. Fl.* p. 28. *Cochlearia Armoracia*, *L. : E. B. t.* 2323.

In moist pastures, and (more commonly) in waste ground about towns and villages, especially on a stiff soil, occasionally; not indigenous. *Fl.* May. 24.

E. Med.—On Ryde Dover, abundant; but seldom seen to flower. In the meadow by the stream immediately above Horningsford bridge.

W. Med.—In a meadow at Freshwater, just before coming to Schoolhouse green, sparingly and probably ejected from some cottage-garden.

Dr. Martin found this plant on the Dover with the leaves variously cut, and even deeply pinnatifid, which is not unusual.

Division II. ANGUSTISEPTÆ.

Pouch short, laterally compressed, opening with two boat-shaped valves keeled and winged on the back; dissepiment narrow, linear or elliptical-lanceolate.

Tribe *Thlaspidæ*. Cotyledons 0=.

XVI. THLASPI, *Linn.* Penny-cress.

“*Pouch* laterally compressed, emarginate; *valves* wingless at the back; *cells* 2—8 seeded.”—*Br. Fl.*

1. *T. arvensis*, *L.* *Penny Cress.* *Mithridate Mustard.* “Pouch orbicular entirely surrounded with a broad longitudinal wing, wing with a marginal nerve, cells about 6-seeded, seeds concentrically striated, leaves arrow-shaped toothed glabrous.”—*Br. Fl.* p. 31. *E. B. t.* 1659.

In cultivated fields, waste ground and by roadsides, but very uncommon. *Fl.* May—July. ☉.

E. Med.—In the vicarage glebe at Newchurch, in considerable plenty.

W. Med.—In a field amongst turnips on the summit of St. George's Down, near Newport, plentiful. The plant persists in both these stations in spite of the plough, but varies in quantity according as the land has been more or less disturbed.

Herb quite glabrous with an alliaceous odour when bruised, very similar in appearance to *Capsella* in its most common form, and excepting when in seed liable to be overlooked on that account. *Root* annual, whitish, slender and tapering, more or less branched and fibrous, or nearly simple, somewhat woody. *Stem* erect, from a few inches to a foot or more in height, rounded, with several sharp angles or ridges, alternately branched, chiefly in the upper half, or nearly simple. *Leaves* alternate, slightly glaucous, a little thick and fleshy, radical ones crowded into a sort of tuft, spreading, obovate, attenuated into pretty long petioles, faintly waved or sinuate, or almost wholly entire on the margin, soon withering away for the most part; *cauline leaves* quite sessile, more or less erect, oblong or oblong-lanceolate and obtuse, the uppermost only somewhat pointed, almost clasping the stem with their short subsagittate bases, the auricles of which are obtuse or pointed, the highest of all entire, their margins sinuato-dentate and waved, the teeth short, acute, with pale thickened tips. *Stipules* none. *Flowers* small, white, in corymbs that are much lengthened out in seed, their pedicels slender patent or spreading. *Sepals* nearly equal, concave, mostly a little spreading, ovate, very obtuse, green with white edges, obscurely 3—5 ribbed. *Petals* about twice the length of the calyx, obovate, very slightly emarginate, erecto-patent, with narrow greenish claws. *Stamens* erect, shorter than the petals; *anthers* greenish. *Hypogynous glands* 4, one on each side of the shorter filaments which they partly surround, small, somewhat triangular and pointed. *Germen* orbicular, flattened, scarcely exceeded by the decurrent style; *stigma* flat, glanduloso-pilose. *Silicles* very large ($\frac{1}{2}$ an inch wide) whitish brown, erect on the now much elongated pedicels, nearly orbicular, with a broad reflexed waved border or wing and a deep narrow notch, at the bottom of which is the very minute persistent style. *Seeds* about 5—7 (4—9 *Curt.*) in each cell, pendulous, reddish brown, roundish ovate, compressed, deeply and concentrically rugoso-sulcate, very beautiful.

The figure of this plant in *E. B.* exhibits the upper leaves as quite acute.

Tr. Lepidineæ. Cotyledons o|| rarely (in *Lepidium*) o==.

XVII. LEPIDIUM, Linn. Pepperwort.

"*Pouch* with the cells 1-seeded; the *valves* keeled or winged. *Petals* equal. *Cotyledons* sometimes o==."—*Br. Fl.*

1. *L. campestre*, R. Br. *Field Pepperwort*. Downy or (rarely) glabrous, stems erect simple or corymbosely branched above, root-leaves oblong petiolate, cauline sagittate lanceolate sessile clasping toothed, pouch (silicle) broadly elliptical or suborbicular squamose and vesicular scabrous at the back, style scarcely longer than the emarginate summit, root annual.—*Br. Fl.* p. 37. *E. B.* t. 1835.

Var. β . Leaves nearly glabrous, *Curt. Br. Ent.* xv. t. et fol. 677.

Extremely common in cultivated fields amongst corn, clover, &c., as well as in waste places, by waysides, along hedges and even in woods occasionally. *Fl.* May—August. ☉.

E. Med.—Frequent about Ryde in various places. Fields above E. Cowes, abundant. Clover-field near Apse Heath. Hedges near Hardingshoot farm.

β. About Ryde and various other parts of the island, occasionally.

"Stems solitary erect 10—12 inches high, corymbosely branched above. Lower leaves almost spatulate, all slightly pubescent, as well as the racemes and pedicels." —*Br. Fl.* Silicles about $2\frac{1}{2}$ or 3 lines long, brownish white, more or less erect on the widely spreading or partly subdeflexed pedicels, and about equal to them in length, broadly ovate elliptical or nearly orbicular, a little incurved, keeled, rough with vesicular or blister-like risings and the depressions caused by their bursting, convex and very gibbous at the back, less so in front, where the circumference is produced into a thin concave border having a shallow emargination at top about equal in depth to the very short minute and not tapering style. Seeds one in each cell, large, brownish red or rust-colour, ovoid, somewhat pointed at one end, thickly and minutely vesiculose scabrous and punctate, pendulous from a falcate process near the summit of the cell at right angles to the dissepiment.

2. *L. Smithii*, Hook. *Smooth Field Pepperwort*. Downy, stems diffuse simple or divaricately branching at top, lower leaves oblong entire on long slender stalks, cauline lanceolate sagittate sessile and clasping toothed, pouch (silicle) ovate elliptical nearly smooth at the back, style about thrice as long as the notch, root perennial. *Br. Fl.* p. 37. *Lepidium hirtum*, Hook. Scot. *Thlaspi hirtum*, Sm. (not L.): *E. B. t.* 1803.

On dry banks, under hedges and about the borders of fields, seldom in cultivated ground, and far less common than the last. *Fl.* April—August. 2f.

E. Med.—Very frequent and luxuriant about Ryde in old clover-fields, &c.

W. Med. Fields by the Medina above W. Cowes, near a wood called, I believe, Bottom Copse, rather plentifully. Near Barton farm and on hedge-banks along the Debbourne walk by W. Cowes. By the roadside between Thorley and Wilmingham near the bridge, but sparingly. Water-gate near Newport, *Dr. Bell-Salter*!! Abundantly on both sides of the Newport road near the Debbourne turnpike, W. Cowes, *Miss G. Kilderbee*. Close to the windmill near W. Cowes, under the garden-fence of the miller's house.

Root perennial,* whitish, tapering and flexuose, very long tough and woody, usually simple or nearly so, often produced at top into one or more woody caudices. Stems in small specimens few or subsolitary, in the larger plants very numerous, from a span to 18 or 20 inches in length, angular and downy like those of the last, with somewhat longer and more copious pubescence, ascending inclining and suberect, or spreading and decumbent, simple or branched only at the summit, the branches fewer, shorter, curved upwards and spreading or divaricate, not as in the foregoing erect and forming a regular corymbose panicle. Leaves broader and shorter in proportion, less crowded and erect than in *L. campestre*, more deeply, distinctly and sinuately toothed, otherwise similar, but the radical leaves are as Smith remarks, more numerous, and persistent even in an advanced state of the plant's growth, elliptical or elliptical-oblong, on very lengthened extremely slender foot-stalks, entire or slightly waved or toothed. Inflorescence as in the preceding species, but the flowers are rather larger. Silicles very like those of *L. campestre* in size, shape and colour, but slightly narrowed or attenuated upwards or more ovate, less gibbous at the back which is much less scaly or blistered and nearly smooth, tipped with the somewhat tapering style, which is very decidedly (about thrice) longer than the emargination. Seeds scarcely above half as large as in *L. campestre*.

* The remains of flower-stems of a former season, with seed-vessels attached, which I have repeatedly found on this plant, clearly show the root to be really perennial.

Lepidium sativum, L. (Common Cress) occurs occasionally in fields and along hedges, but is scarcely naturalized, nor is its native country known I believe with certainty, though stated to be indigenous to the Levant.

XVIII. CAPSELLA, *De Cand.* Shepherd's Purse.

"Pouch laterally compressed, obcordato-cuneate (or elliptical); the *valves* navicular, without wings; *cells* many-seeded."—*Br. Fl.*

1. *C. Bursa-Pastoris*, DC. *Common Shepherd's Purse*. "Pubescent or hairy, stem-leaves sessile lanceolato-sagittate, pouch obcordato-cuneate."—*Br. Fl.* p. 36. *E. B.* t. 1845.

In waste and cultivated ground and in every soil and situation; one of the commonest of weeds. *Fl.* March—November. ☉.

The root when newly pulled up emits an odour like the smoke of pit-coal, whence this plant might with more propriety have been called Fumitory (*Fumaria terreæ*) than the herb to which the name has been from time immemorial assigned, (*Fumaria*).*

** *Pouch evalvate indehiscent.*

XIX. CORONOPUS, *Haller.* Wart-cress.

"Fruit broader than long, 2-celled, without *valves* or wings; *cells* 1-seeded." *Cotyledons* long, linear, curved.—*Br. Fl.*

1. *C. Ruellii*, Hall. *Common Wart-cress. Swine's-cress*. "Fruit undivided crested with little sharp points, style prominent."—*E. B.* t. 1660. *Senebiera Coronopus*, DC.: *Br. Fl.* p. 38.

In waste places, at the foot of walls and by waysides in and about towns, also on dry short pasture, very common in most parts of the island. *Fl.* May—September. ☉.

Very abundant in the Spencer road, on the Dover, and generally about Ryde.

†2. *C. didyma*, Sm. *Lesser Wart-cress*. "Fruit emarginate of 2 wrinkled lobes, style very short." *Senebiera*, *Br. Fl.* p. 38. *Lepidium*, *E. B.* t. 248.

In dry waste places, on banks, &c. about towns, very rare and perhaps introduced. *Fl.* July—October. ☉.

E. Med.—At E. Cowes in several places. First found at the N. end of the Rope-walk there,† by Miss G. Kilderbee, and near the Medina Hotel!!! I have since found it, though sparingly, in a dry ditch by the shore nearly opposite Miss Sheddon's house at Statwood, as also on waste ground thereabouts.

* There are other plants possessed of odours analogous to those of substances quite foreign to their composition, as *Psoralea bituminosa*, which exhales a strong smell of coal-tar.

† The plant is now destroyed at this station by recent building.

A much more delicate plant than the last, with very minute flowers, and far more finely divided leaves. *Root* annual, whitish. *Stem* spreading on the ground, from a few inches to a foot or more in length, copiously branched. *Leaves* small, flat, quite glabrous, rather fleshy, deeply pinnatifid, the segments lanceolate acute with a small deflexed mucro, entire or notched. *Flowers* very minute, greenish yellow, in lateral and terminal racemose clusters that are much elongated in seed. *Sepals* broad, hollow, rather obtuse. *Petals* wanting in my Isle of Wight specimens, as I remember having remarked in those gathered by me in Devonshire, where Mr. Banks* told me he could not find them. "*Stamens* 2 or 4, scarcely ever more," *Sm.* (whence the specific name of the plant), but I find the full complement of 6 in the specimens before me from Cowes, though but two of the filaments have anthers, *viz.*, the two longer ones opposite the flat sides of the germen. *Filaments* much dilated at the base, the 4 shorter ones stand out almost horizontally between the sepals, looking like awl-shaped petals. *Hypogynous glands* 4, oblong, greenish, one on each side at the base of the 2 larger filaments. *Style* scarcely any; *stigma* large, peltate. *Silicle* very small, of 2 round lobes covered with warty prominences, but not wrinkled.

This species has perhaps migrated to us from the W. of England, where it is not uncommon. I have observed it at Plymouth growing abundantly in some of the streets in the outskirts of the town, manifesting itself to the passer-by as he treads it under foot through its strong smell of cresses. Though found in Sussex, it is rare in all the South-eastern counties, and I believe never occurs very far inland or distant from the sea. I have gathered it at Lymington, and abundantly in Ireland, about Cork, Limerick, &c. Its geographical range is very extended, being found in various and distant parts of the world, mostly near the coast. In America I have myself seen it abundantly at Charleston, S. Carolina, in places similar to those it affects with us.

Division III. LOMENTACEÆ.

Pouch or pod indehiscent jointed and dividing transversely into single-seeded or (partly) barren cells.

XX. CAKILE, Tourn. Sea-rocket.

"Fruit short, angular, of 2, 1-seeded indehiscent joints; the upper joint deciduous, bearing an upright sessile seed, the lower one with an abortive or pendulous seed."—*Br. Fl.*

1. *C. maritima*, Willd. *Purple Sea-rocket*. "Joints of the pouch 2-edged, the upper one with 2 teeth at the base, leaves fleshy pinnatifid somewhat toothed."—*Br. Fl.* p. 33. *Bunias Cakile*, *L.*: *E. B.* t. 231.

On the sandy sea-shore in several places, abundantly. *Fl.* June—September. ☉.

E. Med.—At Sea-view. Between Ryde and Nettlestone near Old Fort. Sandown bay, in abundance, *B. T. W.*

W. Med.—Abundant on the spit at Norton by Yarmouth.

"Bushy, branches crooked, and as well as the whole plant succulent. *Flowers* purplish, rarely white."—*Br. Fl.* *Silicles* shortly stalked, in long racemose clusters, erect or spreading, about an inch in length, at first greenish yellow, fleshy and terete, finally whitish brown, dry and corky, with 4 narrow thin ribs or

* Mr. George Banks, of Devonport, an excellent local botanist and author of a beautifully illustrated work, 'The Plymouth and Devonport Flora,' the plates for which were engraved by himself, but of which, unfortunately, the publication has been long since discontinued.

angles, and intermediate veins, and consisting of two unequal, indehiscent, single-celled joints; *superior* articulation ovate-oblong, subglobose, ending in a short, obscurely 2-edged, blunt beak, the lower end abrupt with a deep hollow or acetabulum for receiving the convex extremity of the *inferior*, somewhat turbinate and often abortive joint, which separates when ripe from the superior one at the slightest touch on the uneven commissure, the margin of which is produced into two lateral obtuse projections, readily seen in the more ligneous state of maturity. *Seeds* naturally 1 in each cell, but that in the lower joint often abortive, yellowish, ovate-oblong or elliptical, subreniform, compressed, with 1 or 2 deep longitudinal furrows; that in the upper joint erect, in the lower pendulous. The *cotyledons* and *embryo* are beautifully and readily seen in the unripe seeds of this plant. The inner *hypogynous glands* at the base of the two solitary stamens are rounded, those on the outer side of the four combined and longer ones (united in 2 sets) are elongate almost strap-shaped.*

XXI. RAPHANUS, Linn. Radish.

"Fruit without valves or a dissepiment, with a long style, several-seeded. *Calyx* erect."—*Br. Fl.*

1. *R. Raphanistrum*, L. *Wild Radish. Jointed Charlock.*
 "Leaves simply lyrate, fruit jointed, style 2—3 times longer than the last joint."—*Br. Fl.* p. 43. *E. B. t.* 856.

In cornfields and cultivated ground, not unfrequent. *Fl.* April—November. ☉.
E. Med.—Plentiful amongst turnips at Nettlestone green. Field between Quarr abbey and the Fish-houses, sparingly. Waste garden-ground at Ryde, varying with very pale or white flowers and veined with purple. In turnip-fields at Niton, where I have seen it so abundant as to look as if sown for a green crop. Fields above E. Cowes, and Sandown bay.

W. Med.—Gurnet bay, *Miss G. Kilderbee!*

Root annual, slender, long and tapering, in taste very like the common radish. *Stem* branched, diffuse or spreading, rounded and rough with bristly hairs directed downwards. *Lower leaves* lyrate, the terminal lobe very large and rounded; *uppermost* lanceolate, sinuato-dentate, all rough with stiff hairs or bristles. *Flowers* in corymbs, about the size of those of *Sinapis arvensis*, but narrower, lemon-yellow or sometimes nearly white, prettily veined with reddish or purple streaks, which though not always conspicuous, may be easily seen against the light, and which serve to distinguish this plant from all other British species of its tribe likely to be confounded with it. *Sepals* narrow, coloured, erect, a little spreading at the tips only, more or less bristly. *Petals* narrow, with long, very slender claws. *Hypogynous glands* solitary at the base of the two shorter stamens, quadrangular, with a depression on their summit, those of the longer filaments also single but oblong. *Siliques* in elongated clusters, stalked, curved, striated, with very irregular, often very tumid joints of 2 imperfect cells whose spongy radiating dissepiment becomes obliterated when ripe, ending in a brownish tapering beak. *Seeds* several, ovoid. *Cotyledons* conduplicate, embracing the radicle at their lower extremities.

Mertens and Koch (Deutschl. Fl.), correctly observe that this plant is not really one-celled, as commonly stated. The dissepiment is very clearly seen on cutting the pod across between the seeds, but is often distinguishable with difficulty from the spongy radiations that fill up the cavity. The seeds, which fill the entire area of the pod, seem included in a fold of the septum. A pod, when slit down longitudinally, presents a series of cells in a single row connected by a septum down the centre with a cavity on each side between it and the walls of the pod, either

* Perhaps these glands may afford good auxiliary generic or specific characters in this Order.

vacant or filled up with the cellular radiations just mentioned ; it is this structure which on a transverse section between each seed gives the bilocular appearance. The seeds seem attached to the middle of the septum between its two coats or layers which separate and infold the seeds constituting the cell itself, the intermediate and united portions of the septum becoming wholly or partially obliterated as the pod advances to maturity, leaving only a spongy mass between the now unconnected cells.

2. *R. maritimus*, Sm. Sea Radish. "Leaves interruptedly lyrate, fruit jointed striated, style scarcely longer than the last joint."—*Br. Fl.* p. 43. *E. B.* t. 1643.

W. Med.—Chalky sea-cliffs between Freshwater Gate and the Needles, 1849, *Albert Hambrough, Esq. !!!*

Root of several stout, tapering, nearly simple branches, white and fleshy externally, with a tough woody centre, and possessing an extremely hot, acrid and pungent taste and smell, like Horse-radish. *Stems* numerous, erect or ascending, pale green and somewhat glaucous, tereti-angular and furrowed, rough with deflexed rigid hairs or bristles very copiously clothing their base which is quite hispid, higher up becoming more and more scattered, and at length disappearing towards their extremities which are quite glabrous, copiously and alternately branched, the branches long, slender, spreading or divaricate, brittle, constituting a large, very bushy plant 2 or 3 feet in height. *Leaves* somewhat fleshy, rough with short, rigid, erect, scattered hairs, strongly veined. *Lower stem-leaves* like the radical ones, the uppermost narrowly lanceolate, quite simple and entire or slightly denticulate. *Flowers* in constantly elongating corymbs. *Sepals* equal to or rather shorter than the claws of the petals, greenish yellow, erect, narrowly elongate-oblong, faintly nerved, bulging at the base, obtuse-concave and much thickened at their apex, at and near which are generally one or two bristle-like hairs, otherwise quite glabrous. *Petals* bright yellow, deeper in colour than in *R. Raphanistrum*, the limb obovate-rotundate, entire, wavy, obscurely reticulated with anastomosing veins scarcely visible but by transmitted light, spreading flat at right angles to the long, narrow, colourless, tapering, fleshy claw, which has a strong ridge or keel running anteriorly its whole length. *Stamens* glabrous; *filaments* compressed, the 4 longer exceeding the shorter pair by about $\frac{1}{2}$, without glands at their base, the 2 shorter filaments with a green nectariferous gland of a somewhat cubical figure between them and the ovary; *anthers* elliptical-oblong, erect, at length recurved. *Style* about equal to the longer filaments, subapical, glabrous, tapering insensibly from the ovary, its summit (*stigma*) depressed, capitate, 2-lobed, papilloso-pilose. *Pods* erect, either continued in the axis of their patent, diverging, straight or ascending pedicels, or forming with them angles more or less acute, moniliform, quite glabrous, 1—4-celled, the divisions globose, and when green perfectly smooth and even, at maturity becoming pale brown or yellowish, smaller than in *R. Raphanistrum*, the beak terminating in a much shorter tapering point than in that, otherwise similar.* *Seeds* brownish red, large, globular, very finely and reticulately rugose, precisely like those of *R. Raphanistrum*, in size and colour.

The garden radish (*R. sativus*, L.), differs from both our wild species in being smoother all over, of a more glaucous green, in the very smooth and tumid pod, and flowers of a pale purple or white, and in its thick fleshy root.

* I do not perceive any material difference in the number or depth of the furrows in the pod of these two species, my Isle of Wight specimens of *R. maritimus* not having them more strongly marked than in *R. Raphanistrum* from Crux Easton in the North of Hampshire.

XXII. CRAMBE, *Linn.* Kale.

"*Fruit* without valves, the upper joint globose, deciduous, bearing one inverted *seed* upon a stalk arising from the bottom of the cell; lower joint resembling a pedicel."—*Br. Fl.*

1. *C. maritima*, L. *Sea Kale. Sea Colewort.*

On cliffs by the sea, and on the loose sandy beach; very rare. A single plant on the shore at Norton (leaves only), 1837.

The Sea Kale abounds on the sandy beach at Calshot castle, where the young shoots are blanched by covering them with sand, and are afterwards sent to Southampton market for sale.

Order VII. RESEDACEÆ, *DC.*

"*Calyx* of several narrow sepals. *Petals* unequal, mostly lacinated. *Stamens* 10—24, inserted upon a glandular irregular disk. *Ovary* sessile, 3—4-lobed, 1-celled, with 3—4 parietal placentas bearing many *seeds* (or of 4—6 verticillate 1-celled carpels). *Stigmas* sessile, one to each placenta and alternate with it. *Fruit* opening in an early stage at the extremity along the line of the placentas."—*Br. Fl.*

I. RESEDA, *Linn.* Rocket.

"*Calyx* of 1 piece, many-parted. *Petals* more or less divided and unequal. *Capsule* of 1 cell, opening at the top. *Stigmas* 3—4."—*Br. Fl.*

1. *R. Luteola*, L. *Dyer's Rocket. Yellow-weed or Weld.*
 "Leaves long lanceolate undivided, calyx 4-partite, stigmas 3."
 —*Br. Fl.* p. 43. *E. B. t.* 320.

In waste ground, old chalk-pits and woods, on walls, cliffs, banks, and by waysides, mostly on calcareous soils, abundant in many places. *Fl.* June—September. *Fr.* September, October. ♂ or ♀?

E. Med.—Abundant on denuded chalk banks in Ventnor Cove and elsewhere about that town. In Binstead stone-pits and in other places about Ryde. Near Carisbrooke, along the Undercliff, &c. On the chalk-cliffs at the south end of Whitecliff bay, in plenty. Plentiful in the marl-pit by Upper Morton farm, and in the chalky hollow on the left descending Morton Shoot. Woods at Apse down, frequent.

W. Med.—At Freshwater Gate.

Herb totally glabrous. *Root* tapering, tough and woody, simple or more frequently with several very long, cylindrical, slender branches, and having a powerful odour of Horse-radish. *Stem* straight, erect, pale green, from 1 to 4 or even 5 feet in height, densely clothed with leaves, rounded, hollow, subulately angular and furrowed by the decurrent corners and midribs of the leaves, in very small plants often quite simple, in larger more or less copiously branched generally towards the summit only, at other times emitting numerous ascending virgate branches from the very base, forming a thick bush, or sometimes ramified throughout, the

main stem always greatly exceeding the branches in height. *Leaves* alternate or scattered, crowded, those at the root mostly spreading and gradually attenuated into petioles, soon withering in dry places to a dull orange, the rest sessile, spreading or erect, linear-lanceolate, the inferior often 6 or 7 inches long and above $\frac{1}{2}$ an inch wide, mostly furnished with a pair of minute tooth-like or rather horn-shaped shining glands at their junction with the stem (stipules?), smooth and somewhat fleshy, plane, but more or less crisped or undulate along their edges which are slightly wavy or subsinuately crenate, otherwise entire, obtuse or rounded at apex, or in the higher leaves somewhat pointed, traversed by a conspicuous pale midrib which is very prominent underneath. *Flowers* small, extremely numerous, in slender, erect, tapering, cylindrical and spicate leafless racemes which terminate the stem and branches, at first densely crowded and imbricate, but at length by the gradual extension of their common stalk becoming somewhat distant, on thick and spreading pedicels, which are scarcely above a line in length, dilated and cartilaginous at their base, springing from a subulate bract that is at first shorter than, but finally as long as, the flower. *Calyx* deeply 4-cleft, segments ovate-oblong, obtuse, the 2 upper larger and more distant. *Petals* greenish or yellowish white. *Stamens* rather longer than the calyx; *anthers* pale yellow. *Germens* deeply 3-cleft. *Capsules* small, very numerous, crowded into long dense spikes, 1-celled, nearly hemispherical, truncate and depressed at top, tricuspidate from the acute triangular summit of its 3 thickened, plicately sulcate and strongly wrinkled corners, between which are as many inflexed valvular segments that are oblong-concave, smooth and shining. *Seeds* small, dark brown or nearly black, rotundate-subreniform, highly polished and glabrous.

2. *R. lutea*, L. *Base Rocket*. *Wild Mignonette*. "Leaves 3-cleft or pinnatifid, calyx 6-partite, petals 6 very unequal, stigmas 3."—*Br. Fl.* p. 43. *E. B.* t. 321. *Jacq. Fl. Aust.* iv. 28, t. 353.

In similar situations with the last, here and there sporadically, also in corn-fields, clover-lays, &c., but not commonly met with. *Fl.* July, August. ☉, ☿, or ♀.

E. Med.—Near Arreton, on St. George's Down. In the lane leading from Carisbrooke to Buccombe down, but very sparingly, *G. Kirkpatrick, Esq.*

W. Med.—About Thorley in several places; often amongst clover, but not in any plenty. Field near Kingston, also in clover; and elsewhere occasionally. Plentifully in a cultivated field near Ildecombe farm, above Bottom-ground copse.

Root long, tapering, running deep down into the ground, and dividing below the surface into several branches, fleshy externally, tough and woody in the centre, and with the pungent taste and smell of Horse-radish in a high degree. *Stems* numerous, ascending or decumbent below, spreading in a circular form, more or less branched, very leafy, solid, sharply angular and furrowed, roughish with small cartilaginous points and prominences, especially near the base and on the angles, otherwise glabrous. *Leaves* scattered, glaucous green, fleshy and glabrous, very variable in form and mode of division, the lowermost tapering into long channelled petioles are either spatulate and entire or trifid, the terminal lobe oblong, the 2 lateral sublinear, remote; *upper leaves* variously pinnatifid, the segments oblong or linear-oblong, decurrent, crisped, their margins and midrib fringed with pellucid roundish glands. *Flowers* greenish yellow, in terminal, tapering, acute spikes that are greatly elongated in seed; much like those of the common Mignonette, but without scent, on angular, spreading or patent pedicels rough with glands and erect in fruit. *Calyx* in 6 narrow, linear, single-ribbed, obtuse and slightly incurved segments, the 3 lowermost of which, and especially the central one, are longer than the rest. *Petals* 6, very small, pale yellow, the 2 superior roundish, deeply cleft into two nearly semilunate segments with a buff-coloured ligulate process between them, their bases expanded into a concave wing-like appendage with granulate and fimbriated edges, which is incumbent on and

invests the back and upper margin of the fleshy ciliated nectary on which the stamens are inserted; 2 lateral petals semilunate, sometimes slightly divided, with the same ligulate process at the base of their inferior margin, and a similar but smaller winged appendage than that of the upper ones; 2 lowermost petals very minute, reduced to the alate appendage crowned with the ligulate one. Hooker considers this latter as a lobe of the petal, according to which view the 2 superior are trifid, the 2 lateral bifid, and the 2 inferior petals undivided. *Stamens* numerous; *filaments* white, fusiform, very acute; *anthers* greenish, afterwards buff-coloured. *Styles* 3, subglobose, greenish. *Capsules* 1-celled, erect, oblong, about 5 or 6 lines in length, trigonous, the sides deeply depressed and furrowed, truncate at the summit, with the margins of the triangular dehiscence inflexed, papillose, scabrous, particularly at the angles, which are mucicate with hyaline points, often reddish. *Seeds* ovoid-reniform, olive-brown or finally nearly black, splendid and glabrous.

Reseda fruticulosa, L., or *alba*, common in gardens, and known as the Upright Mignonette, distinguished by its long tapering racemes of white flowers, is occasionally found with us on garden-rubbish, or in loose sand near the sea, but nowhere so plentiful or perfectly naturalized as to merit insertion here.

Order VIII. CISTACEÆ, Juss.

"*Sepals* 3, with a twisted æstivation, with usually 2 outer smaller ones. *Petals* 5, deciduous, with a twisted and crumpled æstivation. *Stamens* numerous. *Ovary* 1, 1- or many-celled. *Style* 1. *Stigma* capitate, simple. *Capsule* of 3—5, rarely 10 valves. *Seeds* numerous. *Embryo* spiral or curved, in a mealy albumen.—Shrubs or herbaceous plants abounding in Southern Europe and Northern Africa, with handsome, generally fugacious flowers."—*Br. Fl.*

I. HELIANTHEMUM, Tourn. Rock-rose.

"*Sepals* 5, of which 3 are equal and 2 outer ones smaller. *Capsule* 3-valved."—*Br. Fl.*

1. *H. vulgare*, Gærtn. *Common Rock-rose* or *Dwarf Cistus*. "Shrubby procumbent stipuled, leaves opposite ovate or oblong nearly flat green above, racemes solitary terminal bracteated, pedicels elongated deflexed in fruit, style bent at the base somewhat clavate at the apex."—*Br. Fl.* p. 45. *Cistus Helianthemum*, L.: *E. B. t.* 1321. *C. tomentosus*, *E. B. t.* 2208.

Var. β . Base of the petals yellow.

Abundant on dry, sloping, sunny banks, pastures, heathy places and along the margins of woods, in sandy, gravelly or chalky soil. *Fl.* June—September. 24.

On Brading and Ashley downs, &c. It fringes the roadside descending from Newport. Between Calbourne and Brixton. Near Brading and Yaverland. Downs near Freshwater, *Mr. Snooke*.

β . "Chalk-pit near Carisbrooke castle," *Mr. D. (Dawson?) Turner*, according to *Mr. Snooke*. Could this have been *H. guttatum*?

Capsules the size of small peas, brownish or whitish, thin and friable, ovato-globose, subpedunculate, finely downy all over, trigonous, 1-celled, bursting along the rather acute angles, the intermediate faces convex. *Seeds* about 10—20, small, pale reddish brown (not black in my perfectly ripe specimens), slightly rough with minute furfureous scaliness, dimpled and angular.

Order IX. VIOLACEÆ, DC.

"Sepals 5, persistent. Petals 5, unequal, and the lower one spurred at the base, or sometimes equal. Stamens 5. Anthers generally with a dilated appendage at their extremity; 2 of them (in the genera with irregular flowers) usually appendiculate at the base. Ovary 1-celled, with 3 parietal placentas, bearing several seeds. Style 1. Capsule 1-celled, 3-valved, bearing the seeds along the middle of each valve. Embryo straight, about as long as the copious fleshy albumen.—Herbs or shrubs, with stipuled leaves."—*Br. Fl.*

I. VIOLA, Linn. Violet.

——— "Violet, dim,
But sweeter than the lids of Juno's eyes
Or Cytherea's breath."

Winter's Tale.

"Calyx of 5 sepals extended at the base. Petals 5, unequal, the under one spurred at the base. Anthers connate, 2 of them spurred behind."—*Br. Fl.*

* Stemless or nearly so.

1. *V. hirta*, L. *Hairy Violet*. Stemless, leaves oblongo-cordate acute and as well as their petioles mostly hairy, sepals obtuse, flower-stalks with a pair of bracts at or below their middle, style dilated upwards, stigma deflexed, creeping scions none.—*Br. Fl.* p. 46. *E. B.* xiii. t. 894.

In woods, groves, pastures, and on hedgebanks, frequent. *Fl.* March—May. *Fr.* June. 2f.

E. Med.—In Whitefield wood. Very abundant at the foot of Ashey down. About Ryde, commonly. Plentiful at Steephill, in the plantations, &c.

W. Med.—Abundant in the Tolt copse, by Gatcombe. Most abundantly in the valley between Apes down and Rowledge, on the *Calamintha sylvatica* station; and in Calbourne New Barn Hummit. Abundant in the little copse above Alvington marl-pit. In and about Parkhurst forest, abundantly, *Miss G. Kinderbee !!!*

Closely allied to *V. odorata*, and often mistaken for a scentless variety of that general favourite, as it begins to flower nearly as soon, but lasts much longer in blossom.

Root whitish, knotty and somewhat woody, more or less divided and tufted with pale, copiously branched, downy fibres, and emitting occasionally short scions with tufts of leaves and flower-stalks at the end, but which do not take root in their turn as in *V. odorata*. *Stem* none. *Leaves* in fascicles from the crown of the root and its scions, or alternate along the latter, during the flowering of the the plant small, about 1—2 inches in length, enlarged afterwards or in fruit to 3 or 4 inches, varying in form from roundish ovate or heart-shaped to ovate-oblong, more or less acute but not acuminate, usually obtuse or even rounded at the apex, deeply cordate, the lobes when young inflexed or hooded as in others of the

geous, more or less pubescent on both sides with short, erect, simple hairs, usually most so underneath, often nearly glabrous and somewhat shining, exhibiting both states even on the same plant, broadly and very obtusely crenate, the serratures naked or ciliated. *Petioles* varying in dimension according to age and position, from an inch or two in the earlier to a span long in the full-grown state, semiterete or subtriquetrous, broadly but not deeply grooved above, more or less pubescent and even hirsute, often glabrous or nearly so as the leaf it belongs to is hairy or smooth, and this on one and the same specimen. *Stipules* in pairs at the very base of the petiole, lanceolate, very acute and acuminate, submembranaceous, uncoloured, the points greenish, ciliato-dentate, the teeth gland-tipped. *Scapes* single-flowered, numerous, springing from amongst the leaves of the root or scions, various in length, as long as or longer than the leaves, or sometimes shorter, erect, lax or reclining in fruit, slender, quadrangular, grooved and twisted, glabrous or clothed with scattered, deflexed, rigid hairs, chiefly confined to that part beneath the *bracts*, which are usually situated below but often about the middle of the scape or even higher, and are lanceolate, opposite, alternate or a little remote, erect or appressed, clasping and somewhat lobed, at base toothed and serrate, acute and entire at their upper part, not coloured. *Flowers* greatly like those of *V. odorata* in size, colour and structure, but usually paler and quite scentless, the latter ones of the season often apetalous but fertile. *Sepals* much smaller than the petals, ovate or elliptic-oblong, very obtuse and rounded at both ends, faintly 3—5 nerved, more or less ciliated and pubescent, quite plane; the 2 interior smaller and narrower, with somewhat more distinctly membranous margins than the 3 outer, all spreading or recurved at the tips. *Petals* as in *V. odorata*, but paler, with white claws, which in the lowermost petal is marked with a few dark purple lines, less apparent on the 2 lateral petals and wanting on the upper pair. The lateral petals bear a tuft (not a line) of pellucid somewhat clavate hairs above the median line towards the claw, all either quite entire or more or less emarginate; *spur* of the lowermost petal mottled purplish red, short, thick and very obtuse, sometimes a little attenuated with a small but distinct incurved process at the end. *Stamens* with orange-coloured, apiculate, scarious appendages. *Ovary* conical, subglobose, ribbed, very downy. *Style* glabrous, stouter than in *V. odorata*, appearing as if suddenly pinched or constricted behind at the top of its short somewhat porrected base, then erect, compressed and much dilated upwards, the apex rounded and sloping anteriorly into a short, triangular, bluntish and slightly deflexed point or *stigma*.* *Capsules* drooping or reclining on the ground, about the size of peas, globose, very obtusely and obsoletely 6-lobed, hoary with short erect pubescence, often purplish, not tipped with the style when ripe, though the latter adheres for some time to the immature capsule. *Seeds* large, exactly ovoid, brownish yellow, highly polished, attached by an oblique, white, furrowed and fleshy crest or caruncle, of nearly their own size.

2. *V. odorata*, L. *Common, Sweet or March Violet*. Stemless, leaves roundish heart-shaped bluntish and well as their petioles nearly glabrous, sepals obtuse, flower-stalks with a pair of bracts above the middle, styles scarcely enlarged upwards, stigma nearly straight, scions creeping. *Sm. E. Fl.* i. p. 302. *Br. Fl.* p. 46. *Lind. Syn.* p. 35. *E. B.* ix. t. 619. *Curt. Fl. Lond.* fasc. i. t. 63.

Var. *a*. Flowers violet.

Var. *β*. Flowers white, fragrant; lateral petals with or without a hairy line. *V. Martia alba*, Ray, *Syn.* ed. 3tia, p. 364. *Leighton, Shrops. Fl.* p. 116, var. *g*. *alba*, and var. *γ*. *imberbis*.

In similar places with the foregoing, and nearly as common. *Fl.* March, April. 24.

* The style, as it appears attached to the downy germen, strongly reminds one of the head and neck of an ostrich.

Var. *a.* Not common. About the ruins of Quarr abbey, sparingly, *Miss Anne Salter* !!! Abundant at Steephill with var. *β.*, and in Pelham woods, sometimes with lilac blossoms, *A. Hambrough, Esq.* Near Carisbrooke, *Miss Wise.* In the Tulip-meadow near Hardingshute farm, and hedgebanks of the fields adjoining, in plenty.

Var. *β.* The more frequent form in this island. Common about Ryde, at Quarr abbey, &c., mostly without any tuft or line of hairs on the lateral petals. Abundant at Steephill (also the beardless var.) About Newchurch. Abundant on the N. side of Shorwell, about North Court, &c. In the thicket at the top of Alvington-manoor chalk-pit. Close to the Forest Barn between Skinner's hill and Queen Bower, also, according to report, with pink blossoms by the roadside between Newchurch and Newport, *E. Vernon, Esq.*

Root or rather rhizome creeping, much branched and fibrous below, scaly above, emitting long horizontal stolons that take root at intervals and shoot up into fresh plants. Leaves springing from the crown of the caudex, roundish heart-shaped, obtuse or slightly pointed, somewhat shining, evenly and bluntly crenate, more or less clothed with fine erect pubescence, most copious in the young state, when older becoming for the most part nearly glabrous. Petioles very long, semicylindrical, grooved above, downy with short deflexed hairs, or like the leaves themselves nearly glabrous, with a basal pair of large, pale, lanceolate, acute, entire or somewhat toothed, free stipules fringed with distant glandular points. Peduncles solitary, from the bosoms of the leaf-stalks, 3 or 4 inches long, obsoletely quadrangular, channelled, smooth or slightly hairy, the hairs patent or deflexed; having a pair of narrow, acute, erect, opposite or sometimes rather distant bracts, usually situated a little above the middle of the peduncle, never I believe in this species below the centre, and occasionally much higher up, their edges slightly fringed, toothed or serrate. Flowers drooping from the deflexion of their peduncles at top, similar in size and appearance to those of the last species, but of a deeper more purplish blue, and giving their name to that peculiar tint, often varying in *β.* to lilac or white; in all the varieties for the most part delicately fragrant, or occasionally (as in specimens before me from Steephill) from local peculiarities nearly scentless. Sepals oblong, very obtuse, obscurely 3-nerved, smooth, with narrow membranous borders, their tips mostly a little recurved. Petals streaked in the purple var. towards the base with darker lines, quite plain in the white, rounded, entire, the lower one only emarginate, in both varieties either with, or (as in those of each kind before me) without any tuft or line of pellucid hairs on the lateral petals towards the claw, though said to be more frequently present than wanting; spur (nectarium) short, very obtuse and inflated. Anthers nearly sessile, converging but not united, with orange-coloured scarious points, the two undermost with a broad, vertically compressed, fleshy appendage from the back of each, with thickened diverging green tips, enclosed by the spur. Ovary conical, hispido-pilose, with several prominent ridges. Style suddenly contracted a very little above the origin, then enlarging upwards to a nearly uniform thickness, as far as the acute, beak-like, horizontal or somewhat deflexed stigma.

As in the last species, some of the later flowers seem more or less imperfect or apetalous. Independent of the delightful perfume of this humble flower, that ere the swallow comes

“takes the winds of March with beauty,”

discovering its name and retreat to the most unlettered admirer of Nature, before our science

“Ranged the wild rosy things in learned orders,
And fill'd with Greek the garden's blushing borders.”

Other marks sufficiently distinguish it from the preceding.

3. *V. palustris*, L. *Marsh Violet.* Stemless, leaves roundish or cordato-reniform crenato-serrate quite glabrous, sepals bluntish, bracts placed about the middle of the peduncles, styles dilated

upwards, stigma flattened at top with a lateral beak, scions none, root creeping. *Sm. E. Fl.* i. p. 303. *Br. Fl.* p. 47. *Lind. Syn.* p. 35. *E. B.* vii. t. 444. *Curt. Fl. Lond.* fasc. 3, t. 58.

Sir James Smith refers to a figure of this species in Abbot's *Fl. Bedford.*, in addition to that of *E. B.*, not perceiving that both are impressions from the very same plate.

In spongy bogs, wet pastures and swampy woods and thickets in East Medina, abundant, though very local. *Fl.* April—June. *Fr.* June. 2l.

E. Med.—In Horringford withy-bed it quite covers the soil in many places. In boggy ground where the Cranberry grows above the Wilderness, towards Appleford. Parsonage Lynch, Newchurch, and I believe in most boggy thickets about that village. Very plentifully in wet ground above Alverstone mill, with *Myrica*, *Menyanthes* and *Hydrocotyle*, in various places. In a low meadow near Merrygarden, but sparingly. Bog near Burnt House, *Dr. Bell-Salter*. Marsh on Apse heath, *Mr. Snooke*.

Whole plant perfectly glabrous, excepting, it is said, the young leaves occasionally. *Root* pale, nodosely articulated, creeping horizontally and emitting numerous slender branching fibres, but no stolons. *Leaves* few, radical, perfectly glabrous, somewhat succulent and often very shining underneath, roundish reniform, nearly circular, sometimes slightly pointed, deeply cordate, broadly, evenly and shallowly crenate. *Petioles* variable in length, generally much, sometimes many times longer than the leaves, terete but flattened above and grooved for some distance below the summit, not winged, brittle, with a tough medullary cord in the centre. *Stipules* large, ovate or lanceolate, acute, membranous, sheathing and persistent, entire or minutely glanduloso-denticulate. *Scapes* 1 or more, simple, erect, about 2—5 inches high, single-flowered, as long as or longer than the leaves, flattened on two opposite sides, with a slight furrow along each face, most conspicuous towards the summit or above the pair of small, lanceolate, acute, somewhat toothed *bracts*, placed opposite to or a little alternate with each other about the middle of the scape. *Flowers* nodding, scentless, the size of the common Sweet Violet. *Calyx*-segments equal in length, entire, with narrow white edges, scarcely half the length of the petioles, rounded or obtuse, faintly nerved, the 2 interior narrower, elliptical, the 3 outer ovate-oblong. *Petals* of a very dilute grayish blue or purple, occasionally white, the lowermost one obovate, more or less emarginate, beautifully pencilled with dark purple veins, terminating posteriorly in a very short straight and obtuse *spur*; two lateral petals with a small tuft of clavate pellucid bristles near their upper margin towards the claw, where is a central purple streak and two faint lateral ones; upper petals plain. *Anthers* sessile, with orange-coloured appendages, the 2 inferior with a short green securiform process. *Style* ascending and greatly contracted just above the base, thence much dilated upwards to its flat truncate summit (*stigma*), which is produced anteriorly into a short straight beak. *Capsules* whitish, drooping or pendulous, for the most part so strongly deflexed as to be applied to the peduncle, sometimes erect, 5 or 6 lines long, oblongo-elliptical, very obtuse, bluntly trigonous, with 3 deep furrows on each face, the valves at length hard and brittle. *Seeds* ovoid, dark bottle-green, smooth and shining, attached by a minute caruncle at their pointed extremity, the other end marked by a small flat scar.

The Marsh Violet is a plant of cold mountainous districts, hence it is seldom seen in the S. of England, though common in the northern counties.

** *With an evident stem.*

4. *V. canina*, L. *Dog Violet*. "Primary stem short and bearing leaves only, lateral ones or flowering branches numerous ascending simple, leaves broadly cordate more or less acute, stipules ciliato-dentate, sepals acuminate."—*Br. Fl.* p. 47. *E. B.* t. 620.

β. minor. Stem woody, leaves smooth and rigid, spur short obtuse and yellowish. *V. flavicornis*, Sm. *E. Fl.* i. p. 305; *E. B.* xxxviii.; *Suppl.* t. 2736.

Everywhere in woods, thickets, pastures, on banks, heaths and bushy places. *Fl.* April—August. 24.

β. Near Debbourne farm, Miss G. Kilderbee.

5. *V. lactea*, Sm. *Cream-coloured Violet.* "Stem dividing into procumbent or suberect flowering branches, leaves ovate-lanceolate scarcely cordate at the base (*H. W.*), stipules ciliato-dentate or entire, sepals acuminate."—*Br. Fl.* p. 48. *E. B.* t. 445.

On heathy and boggy ground, rare. *Fl.* May. 24.

E. Med.—On Staplers heath, and at Mount Misery, both by Newport, G. Kirkpatrick, Esq.!

W. Med.—Inclosures about Parkhurst barracks, Mr. W. D. Snooke.

6. *V. tricolor*, L. *Pansy. Heart's-ease. Love in Idleness.* "Root annual or fusiform, stem angled branched, leaves oblong deeply crenate, stipules lyrate-pinnatifid, spur of the corolla about as long as the produced base of the calyx."—*Br. Fl.* p. 48.

β. minor. Petals shorter than the calyx. *Br. Fl.* p. 48. *Fl. Dan.* x. t. 1748. *V. arvensis*, Murray, Forster. *E. B.* xxxviii. t. 2712.

β. Common in cultivated fields and waste ground, also on dry banks, in open cultivated fields and waste places, very common. *Fl.* the whole summer. ☉., ♂. or 24. (perhaps only when cultivated). In this var. the flowers are pale yellow or whitish, and the germen nearly globular, with a dark spot on the style in front immediately below the stigma.

It is remarkable that the only form of *V. tricolor* known in this island in the wild state should be the var. *β. minor*. The Rev. G. E. Smith has remarked that the normal form with deeply coloured petals, much longer than the calyx, or the true Pansy, becomes the more common of the two in the North of England, where, as in Shropshire and Yorkshire, it decorates the fields in rich profusion; whilst in the South it is comparatively rare, and there mostly assumes the more contracted habit we observe in the above variety.

Order X. DROSERACEÆ, DC.

"Sepals usually 5, persistent, equal. Petals as many as the sepals. Stamens free, equal in number with the petals or 2—4 times as many; anthers dehiscing longitudinally. Ovary 1. Styles or sessile stigmas several. Capsule 1-celled, with 3—5 placentas and 3—5 valves, loculicidal; valves bearing the seeds along their middle. Seeds never comose.—Herbs of marshy ground, with the leaves all radical or stem-leaves alternate."—*Br. Fl.*

I. DROSERA, Linn. Sun-dew.

"Styles 3—5, variously divided, usually bipartite and resembling 6—10 distinct styles. Capsule 1-celled, many-seeded."—*Br. Fl.*

1. *D. rotundifolia*, L. *Round-leaved Sun-dew.* "Leaves radical obovato-orbicular spreading, petioles hairy, seeds chaffy."—*Br. Fl.* p. 50. *E. B.* t. 867.

On spongy and peaty bogs, the wet sides of marsh-drains and ditches, frequent. Fl. July—September. 24.

E. Med.—Profusely on Munsley peat-bed. In boggy spots at the western extremity of St. Helen's green. Abundant on the marshy skirts of Lake common abutting on Sandown Level. The Wilderness, and on the northern declivity of Bleak down, also abundantly. On the moors about Rookley and Godshill, plentiful.

Root or rather *rhizome** slender, filiform, emitting a few fibres, loosely attached to the soft boggy soil or insinuating themselves amongst the moss. *Leaves* all springing from the caudex or root-crown, alternate, more or less flatly spreading in a circular form, not very numerous, from about 3 to 5 lines in length and about the same breadth, obovate-orbicular, smooth and shining beneath, with very obscure venation, their somewhat deflexed margins elegantly fringed with spreading black or purple oblong glands, on very long tapering and pellucid crimson stalks; † their entire upper surface beset with similar glands, but more shortly pedicellate as they approach the centre, and erect; suddenly attenuated at base into pale or bright crimson, subterete, 2-edged *petioles* varying in length from about 1 to 2 inches, clothed with scattered pellucid hairs above, and furnished at base with an acutely laciniated or jagged membrane, dilating and decurrent into a winged border, and forming a sort of aduate stipules. *Scapes* 1, 2 or 3, simple, erect, crimson, terete, slender and flexuose, quite glabrous, from 2 or 3 to 8 or 9 inches high, always when in flower much exceeding the leaf-stalks in length. *Flowers* small, white, subsecund, alternate, in a simple or sometimes slightly forked terminal raceme which is circinate in veneration, gradually unfolding as the flowers expand, at last becoming upright and from about 1—2½ inches in length. *Pedicels* much shorter than the flowers, thickened upwards, nearly erect. *Bracts* solitary, subulate, deciduous, placed on the main stalk of the raceme, either above or below the pedicel, more rarely on the pedicel itself just below the flower, or at its base. *Calyx* greenish, its segments elliptical-oblong, rounded, ribless, unequally notched, the serratures gland-tipped. *Corolla* white. *Capsules* erect.

Drosera longifolia, L., was observed by Dr. Salter and myself rather plentifully at Gomer pond by Gosport, growing amongst *Cladium*, 1842.

Order XI. POLYGALACEÆ, Juss.

"*Sepals* 5, the two inner generally large and petaloid. *Petals* 3—5, more or less united with the filaments of the *stamens*, which form two parcels, each with 4 *anthers*, opening by pores at the apex. *Ovary* 1, usually 2-celled. *Style* and *stigma* 1. *Fruit* a capsule, or drupaceous, 2- or 1-celled; dehiscence loculicidal. *Seeds* solitary, pendulous, often with a caruncle at the base.—

* The root, which is thought by Decaisne to be parasitic on the moss or *Sphagnum* upon which it grows, is given by DeCandolle as annual, which it must be confessed it has greatly the appearance of being; and the dried leaves always seen below the crown may be merely the earliest ones of the current year, as young leaves keep constantly arising during the flowering of the plant.

† The glands of the leaves during warm days secrete a globule of clear viscid fluid, like dewdrops, whence their name, and with their stalks betray a degree of irritability, curving eventually over the flies and other small insects which may generally be found ensnared by their clammy exudation, but never, so far as I could observe, assisting primarily in their capture by any sudden contraction as in *Dionæa muscipula*.

Shrubs or herbs. Leaves without stipules. Flowers usually racemose."—*Br. Fl.*

1. POLYGALA, Linn. Milk-wort.

"Calyx with 2 sepals, wing-shaped and coloured. Petals combined by their claws with the filaments, the lower one keeled. Capsule compressed. Seeds downy, crested at the hilum."—*Br. Fl.*

1. *P. vulgaris*, L. *Common Milkwort*. "Perennial, keel crested, flowers in a terminal raceme, wings of the calyx ovate or oblong about as long as the corolla, capsule glabrous sessile, stems herbaceous often branched at the base, branches simple procumbent or ascending, leaves on the branches linear or oblong."—*Br. Fl.* p. 52. *E. B.* t. 76. *P. amara*, *Don* in *E. B. S.* t. 2764. *P. calcarea*, *Schultz*.

In heathy open places, pastures, on dry banks, and in woods, &c., very common. *Fl.* May—July. 24.

"Stems 4—8 inches long. Corolla beautifully crested, blue, purple, pink or white. Calyx-leaves persistent, enclosing the fruit."—*Br. Fl.* 5th ed.

2. *P. depressa*, *Wend.* *Trailing Milkwort*. Stems depressed filiform branched leafy, lower leaves mostly crowded oblong or obovate-elliptical obtuse, upper leaves lanceolate scattered, racemes short few-flowered, flowers crested, sepals (wings) oblong-obovate their lateral nerves reticulate anastomosing with an oblique branch of the central nerve. *Wenderoth ex Koch* in *Röhl-ling's Deutschland's Fl.* v. p. 72. *Cosson et Germ. Flore des Env. de Par.* i. p. 56, and *Atlas*, tab. 8, fig. B. *Lloyd, Fl. de la Loire inf.* p. 32. *Godron, Fl. de Lorraine*, i. p. 97 (opt. descr.) *Lej. et Court. Comp. Fl. Belg.* iii. p. 29. *Bromf. Phytologist*, ii. p. 966. *P. serpyllacea*, *Reichenb. Fl. Germ. excurs.* No. 2398. *Polygala myrtifolia palustris humilis et ramosior*, *Ray, Syn.* p. 287 (edit. 3tia). *Blackstone, Spec. Botan.* p. 76.

Fl. May—September. 24.

On Bleak down, in bare gravelly spots, but sparingly.

Root more slender than that of *P. vulgaris*. Stems diffuse, prostrate, almost filiform, lying flat upon the ground and spreading in every direction, with irregular wiry branches, which, as well as the principal stems, are for the most part closely beset with leaves at their base or about the middle of their length; the older occasionally bare of leaves below, from the falling away of the latter through time. Leaves (in my fresh specimens) yellowish green, leathery and shining, the lower and middle oblong-elliptical or obovate-elliptical, obtuse or very slightly pointed, crowded, opposite or alternate, mostly increasing in size as they ascend up to a certain point, beyond which they again diminish, and finally become longer and narrower, or elliptic-lanceolate, more remote, alternate or scattered. Racemes terminal and lateral, comparatively with *P. vulgaris* few-flowered and short. Flowers small, bluish white (rarely deep blue, *Koch*); lateral enlarged sepals (wings) oblong-obovate, scarcely pointed, their lateral nervures considerably

ramified,* and confluent towards the margin, anastomosing with the central nerve by an oblique branch or two of the latter, generally towards the apex.

This plant accords pretty exactly with the description given by Koch and others of *P. depressa*, and from its peculiarity of habit challenges attention as a well-marked form of the common Milkwort.

I am almost persuaded that *P. amara*, *P. comosa*, *P. major*, *P. calcarea*, and *P. depressa* are so many states of one protean species, viz., *P. vulgaris*, the varieties of which, even within the limit allowed to deviations from the normal type, are sufficiently numerous to induce a belief that the above so-called species are but further developments of similar changes in the common European plant; in proof of which may be adduced the great discrepancy in the characters assigned to and the accounts given of these assumed species by the authors treating of them.

Order XII. FRANKENIACEÆ, *St. Hil.*

"Sepals 4—5, combined into a furrowed persistent tube. Petals 4—5, clawed, crowned at the mouth. Stamens as many as the petals and alternating with them, with usually 1—2 accessory ones opposite to the petals. Ovary 1. Style filiform, 2—3 cleft. Capsule 2—4 valved, 1-celled. Seeds minute, attached to the margins of the valves. Embryo straight in the albumen.—Herbaceous or suffruticose, much branched. Leaves opposite, without stipules, but with a membranous sheathing base."—*Br. Fl.*

I. FRANKENIA, *Linn.* Sea Heath.

"Stigmas 3."—*Br. Fl.*

1. *F. laevis*, *L.* Smooth Sea Heath. "Leaves linear revolute at the margin glabrous ciliated at the base."—*Br. Fl.* p. 52. *E. B. t.* 205.

On muddy salt-marsh flats, also on cliffs and banks by the sea; but rarely. *Fl.* July—September. 24.

E. Med.—On a turf fence at the extremity of St. Helen's spit near the ferry, sparingly, and on the ground adjacent; more plentiful on the flat sandy shore at the upper end of the spit, a short distance from the causeway to the mill, and covering a considerable space.

W. Med.—Edges of the brine-pans of Newtown Saltern. In considerable abundance in 1837 at the base of the stupendous chalk-cliffs in Scratchell's bay, towards its eastern or Sun-Corner end, as indicated to me by the *Rev. G. E. Smith*, from whom I had the first notice of this species as indigenous to the island. It is now extinct in this locality, unless, as is probable, it grows on the higher and inaccessible ledges of the cliff, the station at the foot being since overwhelmed by the falling of the chalk from above !!!

A much-branched, procumbent, and almost shrubby plant, with heath-like foliage, but from its prostrate habit liable to be passed by, even when in flower, for some *Arenaria*, or other fleshy-leaved maritime species, of more common occurrence.

* I am disposed to lay but little stress on the neuration of the wings or enlarged lateral sepals, finding this character liable to considerable irregularity on the same specimen.

Root tough, woody and tapering, emitting numerous round, straggling, much-branched, prostrate, procumbent or dependant stems, forming large tufts or roundish patches, according to the situation; the younger branches reddish and a little hairy. *Leaves* in small, crowded, almost whorled fascicles on the main stem and short lateral branches, much like those of some heath, dark glaucous green, often bright red or yellow in part from age or decay, about $\frac{1}{4}$ inch long, bluntish, ovate, but from their strongly revolute or deflexed margins appearing as if linear and semicylindrical; fringed on their short, broad, sheathing bases with a few stiff hairs. *Flowers* solitary and sessile, from the bosom of the lateral and terminal leafy bundles, pale pinkish purple, rather small and inconspicuous. *Calyx* tubular, somewhat fleshy, subcylindrical, with 5 prominent angles, and as many deep, erect, acute segments. *Petals* obovate, a little crenate and wavy, with long claws, at the foot of each of which is a lanceolate erect scale attached to the claw for the greater part of its length. *Stamens* usually 6, sometimes more, placed close under the germen, their *filaments* broad, flat, and dilated downwards; *anthers* yellow, 2-lobed, 2-celled. *Germen* conical, 3-lobed and 3-furrowed. *Style* linear, 3-cornered; *stigmas* 3, greenish, oblong, obtuse, spreading or recurved.

Order XIII. CARYOPHYLLACEÆ, Juss.

"*Sepals* 5 or 4, persistent, distinct or united. *Petals* as many, rarely wanting. *Stamens* as many as or double the number of the petals, inserted upon a fleshy elevated disk, supporting the ovary, or a ring. *Anthers* opening longitudinally. *Ovary* 1. *Styles* 2—5. *Capsule* 1-celled (sometimes only so at the summit, and 2—5 celled below), 2—5 valved or opening at the summit with teeth, placenta central and free in the 1-celled capsules, in the rest axile. *Seeds* generally numerous. *Embryo* generally curved round a mealy albumen.—Herbs, more or less tumid at the joints, with opposite entire leaves, without stipules (by which alone our Suborder Alsineæ differs from Paronychiaceæ)."—Br. Fl.

Suborder I. SILENEÆ.

Sepals united into a monophyllous calyx. *Petals* and *stamens* hypogynous, inserted on the summit of a more or less conspicuous stalk to the ovary.

1. DIANTHUS, Linn. Pink.

"*Calyx* monophyllous, tubular, 5-toothed, with about 4 imbricated opposite scales or bracteoles at the base. *Petals* 5, clawed. *Stamens* 10. *Styles* 2. *Capsule* cylindrical, 1-celled. *Seeds* pel-tate."—Br. Fl.

"Sir, the year growing ancient,—

Not yet on summer's death, nor on the birth

Of trembling winter,—the fairest flowers o' the season

Are our carnations and streak'd gillyflowers."

Winter's Tale.

1. *D. Armeria*, L. *Deptford Pink*. "Flowers clustered fascicled, scales of the calyx lanceolate subulate herbaceous downy as long as the tube."—*Br. Fl.* p. 55. *E. B.* t. 317.

In dry gravelly or sandy pastures, along hedges and borders of fields here and there, but very sparingly. *Fl.* July, August. ☉.

E. Med.—A specimen found by the *Rev. G. E. Smith* in a field near Binstead, 1839!!! Near the Grove by Brading, [the late] *Lady Brenton*.

A species of "wild pink" grows, I am told, between the village of Sandrock and the sea, which is probably either this species or *D. deltoides*.

Root tapering, brownish or yellowish, flexuose, branched or nearly simple. *Stem* solitary or two or three, erect, from 1 to 3 feet in height, firm, rigid, terete, shining and glabrous below, downy above with short spreading hairs, oppositely or alternately and as it were dichotomously branched, the branches divaricate, straight and wiry. *Leaves* opposite, radical ones crowded or cæspitose; cauline leaves nearly erect, linear, acute, connate, rather distant, the lower glabrous or nearly so, the rest downy and slightly scabrous, prominently 3-, 5-, or 7-ribbed beneath, with pale membranous margins at their base. *Flowers* aggregate in terminal heads or clusters, mostly 2 or 3 together, though appearing but as one, scarcely $\frac{1}{2}$ an inch in diameter. *Calyx* tubular, slightly inflated or ventricose, about 7 lines in length, with numerous close dark-green striae, the summit in 5 erect, very acuminate, unequal teeth or segments, mostly with purplish margins, and hairy like the whole upper portion of the calyx, of which they occupy nearly $\frac{1}{2}$ of the entire length. *Petals* spreading, very small, the limb oblong-obovate, bright rose-colour spotted with white, and having a curved and dentate crimson line near the beginning of the very long, linear, greenish claw, down the centre of which run two prominent ridges with a sharp groove or furrow between them, and at the tip of the claw are a very few white slender hairs; the limb of the petal entire except at the summit, which is dentate-subtrifid; the 2 lateral and basal teeth very distinct, triangular, pointing forwards, the intermediate and terminal portion or lobe oblong, emarginate, unequally dentate and erose. *Stamens* unequal, shorter than the calyx, glabrous, the alternate and outer with a crenate expansion of their bases; *anthers* elliptical-oblong, violet-coloured, erect; *pollen* blue, globular. *Styles* white, semicylindrical, tapering, glanduloso-pubescent on the inner side, about as long as the calyx, a little spreading at the summits, their bases contiguous. *Germen* oblongo-cylindrical, smooth and glabrous. *Seeds* dull black, shagreened, obovate, convex on the back, concave on their inner face, which is divided lengthways by a ridge having a tubercle-like prominence in its centre, and ending in a short obtuse beak.

The Deptford Pink is quite naturalized in some of the northern parts of the United States. I have gathered fine and abundant specimens in dry stony fields in the vicinity of Boston, Mass.

2. *D. prolifer*, L. *Proliferous Pink*. "Flowers clustered capitate, scales of the calyx ovate membranous about the length of the tube, outer ones, acute inner ones blunt, leaves rough at the edge."—*Br. Fl.* p. 56. *E. B.* t. 956.

In dry sandy or gravelly pastures; very rare. *Fl.* June—September. ☉.

E. Med.—Amongst low bushes on the Dover, Ryde, *Charles Cardale Babington* and *W. Christy, Esqs.*!!! Now very scarce in this, the only known station in the island.*

Herb very attenuate, 3—18 inches high. *Root* slender, whitish, nearly simple. *Stem* simple or branched (in gardens very much so) from the base, a little pubescent, and like the leaves somewhat glaucous, though less so than in most other species of the genus. *Leaves* very short, linear, opposite, sheathing the swollen joints of the stem, acute, rough-edged with minute prickles pointing forwards.

* [This station is now (1854) destroyed by building, *Edrs.*]

Flowers from 3—8 or more in solitary, terminal, stalked heads not an inch long, surrounded by 6 ovate, whitish, unequal, chaffy scales, and every blossom by 2 similar ones concealing it whilst in the bud. *Calyx* very long and narrow, with 5 coloured tapering ribs. *Petals* lilac, very small and inconspicuous, notched and with a dark central line towards the claw, those of one flower only expanding at a time on the same head. *Capsule* oblong, pale, the apex a little oblique, finally rending the calyx by its increasing size, and giving each head a broader or more expanded form. *Seeds* brownish black, curiously hollowed on the side of their attachment, with incurved edges, their outer face convex with a kind of beak at one end, covered with regular prominent points.

In this, as in some other species of *Dianthus*, only one or two flowers expand at a time in the same head. The present plant is more remarkable for the minuteness of its blossoms, the tenuity of its stem and leaves, and its rarity, than for beauty, being in fact the least ornamental of the whole genus. The flowers continue open from an early hour in the morning till the afternoon.

II. SAPONARIA, Linn. Soapwort.

"*Calyx* monophyllous, cylindrical, 5-toothed, without bractees at the base. *Petals* 5, clawed. *Stamens* 10, alternate ones opposite the petals but not adhering to their claws. *Styles* 2. *Capsule* oblong, 1-celled, or 2-celled at the base, 4-toothed. *Seeds* globose or reniform."—*Br. Fl.*

1. *S. officinalis*, L. Common Soapwort. "Leaves ovato-lanceolate, calyx cylindrical glabrous, capsule 2-celled at the base."—*Br. Fl.* p. 57. *E. B. t.* 1060.

β. Flowers double.

In moist meadows, by river-sides, along hedges and the borders of woods, scarcely indigenous with us. *Fl.* July, August. 24.

E. Med.—In a little plantation of shrubs nearly opposite the parsonage at Yaverland; very doubtfully wild.

The fact of our specimens bearing double flowers is not conclusive of their having escaped from a garden, as this plant betrays a great tendency to become double in places where it is indubitably wild. The suspicious nature of the locality alone makes me hesitate to regard it as indigenous.

III. SILENE, Linn. Catchfly. Bladder Campion.

"*Calyx* monophyllous, tubular, often ventricose, 5-toothed. *Petals* 5, clawed, mostly crowned at the mouth, and the limb generally notched or bifid. *Stamens* 10, alternate ones opposite to the petals and adhering to the claws. *Styles* 3. *Capsule* 3-celled to the middle or only at the base (rarely 1-celled), 6-toothed, many-seeded."—*Br. Fl.*

* Flowers panicked. *Calyx* inflated, bladdery.

1. *S. inflata*, Sm. Bladder Campion. Spatling Poppy. Vect. Bull-rattles. "Flowers numerous panicked, petals deeply cloven with narrow segments scarcely crowned, calyx inflated reticulated, stem erect, leaves ovato-lanceolate."—*Br. Fl.* p. 58. *Cucubalus Behen*, *E. B. t.* 164.

In dry pastures, on hedgebanks, by waysides and borders of fields, also amongst corn, &c., very common. *Fl.* June—August. 24.

2. *S. maritima*, With. *Sea-side Bladder Campion*. "Panicles few-flowered, petals with a shallow cleft and broad segments crowned, calyx inflated reticulated, stem spreading, leaves ovato-lanceolate or spathulate."—*Br. Fl.* p. 58. *E. B.* t. 957.

β. Leaves spinulose on their edges.

On sandy or shingly sea-beach, and on cliffs and pastures near the sea, not common and perhaps not really distinct from the last. *Fl.* June—September. 24.

* *E. Med.*—Brading harbour, *W. Wilson Saunders, Esq.* Dover Point, Ryde, sparingly, *Mr. Snook*.

W. Med.—Shore between Cowes and Egypt, in some plenty.

β. On the cliff behind Mirables, in the part called the Upper Walks, *G. Kirkpatrick, Esq.*

** *Stems panicled, leafy. Calyx elongate, not bladdery.*

3. *S. nutans*, L. *Nottingham Catchfly*. "Pubescent, flowers panicled secund cernuous, branches opposite, calyx cylindrical ventricose the teeth acute, petals deeply cloven crowned their segments linear, leaves (of the stem) lanceolate."—*Br. Fl.* p. 59. *E. B.* t. 465. *S. paradoxa*, *Sm. Fl. Br.* (not *L.*)

On sand, chalk or limestone rocks, cliffs, banks and pastures; rare. *Fl.* May, June. *Fr.* June, July. 24.

E. Med.—In very great plenty on banks of slipped land at the foot of the cliffs in Sandown bay, at its upper end, near where the green sandstone passes into the chalk. At the top of the cliff near St. Lawrence, *John Curtis, Esq.* (l. s. c.)!!!

Root large, thick, yellowish, tapering, branched and almost woody, emitting one or several flowering stems, and many decumbent leafy shoots constituting dense tufts of herbage. *Stems* 18 or 20 inches high, simple, rigid, erect or more usually ascending at the base, the lower joint geniculate and often tinged with purple, round, solid, downy with deflexed pubescence, smoother from the lowermost forks of the panicle to the summit, but covered with a clammy exudation capable in this and others of the genus of retaining small flies, whence the English name. *Leaves* rough with copious, short, simple, jointed hairs; those of the stem few (2 or 3 pairs), distant, opposite, linear-lanceolate, erect, embracing the tumid joints of the stem with their connate bases; *radical leaves* fascicled, on long tapering footstalks, ovate or obovate-lanceolate, partly spathulate. *Panicle* terminal, sometimes a foot long, of several distant pairs of opposite, suberect or spreading, forked and downy branches, each bearing from 3 to 5 or 7 flowers, all those of the same panicle leaning one way, and appearing to droop, from being bent downwards at various angles to their rectilinear pedicels. *Calyx* $\frac{1}{2}$ an inch long, viscid and downy, narrow and ovate in flower, much enlarged above in fruit with 10 coloured ribs. *Petals* twice as long as the calyx, white tinged with greenish yellow at the back, deeply cleft into 2 linear obtuse segments having a bifid, acute, white scale at the base just above their very long claws, whose broad membranous summits terminate in two points. *Stamens* very long, with pale greenish anthers. *Styles* 3, erect, twisted, much shorter than the stamens; *stigmas* oblique, decurved and purplish. *Germen* oblong-obtuse. *Capsules* erect, straw-yellow, ovate or conical, very hard and smooth, obscurely 3-lobed and 6-ribbed, gibbous beneath at the base, partly covered with the dry withered calyx, and opening by a small orifice with 6 (rarely 5) erect or spreading, very rigid teeth. *Seeds* numerous, ash-coloured or reddish, roundish kidney-shaped, flattened on the back and sides, beautifully marked with close rows of raised points in parallel striae.

The flowers of *S. nutans* expand most perfectly during the evening and night, emitting a peculiar though agreeable fragrance. On first opening, the petals are flat and reflexed, but afterwards and in the day time incline forward and roll inwards, which, together with the adhesion of dust, flies and other substances to

the glutinous panicle, gives the plant a shabby diseased appearance in the flower-border.

4. *S. noctiflora*, L. *Night-flowering Catchfly*. "Panicle forked or flowers terminal, petals bifid crowned, calyx with long subulate teeth oblong in fruit with 10 connected hairy ribs, leaves lanceolate, lower ones spatulate, capsule ovate."—*Br. Fl.* p. 60. *E. B.* t. 291.

In sandy or gravelly fields, amongst corn, turnips, &c. *Fl.* July, August. ☉.
E. Med.—In a turnip-field close to Yaverland farm-house, *Albert Hambrough, Esq.*

*** *Stems simple or slightly branched. Flowers in leafy racemes, alternate.*

5. *S. anglica*, L. *English Catchfly*. "Hairy and viscid, petals (small) crowned slightly bifid or obovate entire, calyces with setaceous teeth ovate in fruit."—*Br. Fl.* p. 58. *E. B.* t. 1178.

α. autumnalis. Stem diffuse or procumbent; pedicels finally (in fruit) deflexed.

β. stricta. Stem erect; capsules on diverging, not deflexed pedicels.

In cultivated fields, particularly on light sandy soils; very frequent. *Fl.* June—November. *Fr.* August—October. ☉.

α. I find pretty constantly in fields about Quarr Abbey and the Fish-houses, which in certain years are quite over-run with it, and the next scarcely to be seen. Amongst turnips at Nettlestone green, 1838. Turnip-field between Ninham and Longland farms. Gurnet bay. Turnip-fields about Piles and Athersfield.

β. In light sandy soil, amongst oats, at the upper end of Colwell heath, in great plenty, 1838. Turnip-field on the farm at Kite hill by Wootton bridge, abundantly, 1838.

Fields between Lake, Sandown and Shanklin. Near Princelaid, *B. T. W.* Near Newport, *Curtis, B. G.* Very common about Shanklin, *Mr. J. Woods, jun.*, in ditto. Perhaps these stations include both varieties!!!

Flowers whitish, faint purple or bluish coloured towards the centre. *Calyx* thickly clothed with long white hairs; lowermost capsules moderately diverging, but not deflexed. *Petals* with mostly a shallow notch, sometimes entire or slightly crenate, oblong, rounded. *Capsule* small, about $\frac{1}{2}$ of an inch long, hard, yellowish, ovoid, somewhat pointed, faintly lobed or furrowed, glabrous, the surface glazed and shining with minute, transverse, pellucid, wave-like wrinkles, about equal to and stipitate within the closely encasing calyx, opening at the summit by 6 or 8 short slightly recurved teeth, imperfectly 3-celled. *Seeds* numerous, grayish black, kidney-shaped, compressed and concentrically hollowed laterally, beautifully covered with closely set rows of tubercular points.

The var. *β.*, which from descriptions given by authors I have no hesitation in referring to *S. gallica*, L., has the stem perfectly upright, simple in the smaller, more or less branched in the larger plants, the branches erect or diverging, quite different from the lax, spreading, decumbent growth of *S. anglica* as that species usually presents itself. Mertens and Koch (*Röhl. Deutschl. Fl.* and *Koch, Syn. Fl. Germ. et Helv.*) unite *Silene gallica*, *anglica*, and *quinquevulnera*, and apparently with justice, for whoever will be at the trouble of comparing the descriptions of the three as given by different authors, will perceive how conflicting are the characters laid down for each. The very diffuse procumbent stem of *S. anglica* is the chief mark of that species, which is commonly found growing amongst turnips, potatoes or clover. The upright more rigid habit points out *S. gallica*, from which *S. quinquevulnera* appears merely to differ in the red stains on the petals, which can never enter into the specific character, and are to be more or less traced in all three. The two last are rather corn-plants, and probably owe their difference of appearance from our *S. anglica* to the joint influence of soil and situation. I have seen *S. anglica* from various and widely distant parts of the world.

IV. *LYCHNIS*, Linn. *Campion*. *Lychnis*.

"*Calyx* monophyllous, tubular, 5-toothed. *Petals* 5, clawed. *Stamens* 10, alternate ones opposite the petals and adhering to their claws. *Styles* usually 5. *Capsule* opening by 5 or 10 teeth."—*Br. Fl.*

* *Petals* crowned, cut or bifid.

1. *L. Flos-cuculi*, L. *Meadow Lychnis*. *Ragged Robin*. "Flowers loosely paniced, petals 4-cleft."—*Br. Fl.* p. 60. *E. B.* t. 573.

In moist meadows and other wet marshy or boggy situations; common. *Fl.* May, June. 24.

Capsule yellowish, ovoid, smooth, 4 or 5 lines in length, a little exceeding the dry, closely investing, strongly 10-ribbed *calyx*, opening by 5 broad, equal, much-recurved, slightly hairy teeth. *Seeds* numerous, blackish or reddish gray, reniform, beautifully muricated with raised points in close parallel rows.

2. *L. diurna*, Sibth. *Red Campion*. "Flowers subdiœcious, calyx of the pistilliferous flowers with triangular teeth, capsule nearly globose, the teeth recurved."—*Br. Fl.* p. 61. *Fl. Dan.* xiii. t. 2172. *L. dioica* α., *L.*: *E. B.* t. 1579.

In woods, groves, on grassy hedgebanks and in moist or shaded situations, common. *Fl.* April—September. 24.

E. Med.—About Ryde occasionally. Fields between Sandown and Shanklin, and between Ashey wood and Munwell. Between Ventnor and Newport, *Mrs. Martin*. I found a specimen or two of this species in Greatwood copse, with white flowers, 1842.

W. Med.—About Brixton, sometimes with flesh-coloured flowers.

Capsules ovato-subglobose, paler in colour and smaller than in *L. vespertina* (5 or 6 lines in length), thin and brittle, dehiscing by 10 broadly ovato-triangular, finally strongly revolute teeth, which are often united together in pairs either wholly or partially, in the former case giving the capsule the appearance of being 5-valved. *Seeds* similar to those of the next species, but rather less, grayish black or reddish, their papillæ smaller, more distinct or distant, and much more pointed, each surrounded as in that by a denticulated circle, by which their bases seem as it were dove-tailed into one another.

3. *L. vespertina*, Sibth. *White Campion*. "Flowers subdiœcious, calyx of the pistilliferous flowers with linear-lanceolate elongated teeth, capsule conical, the teeth erect."—*Br. Fl.* p. 61. *L. dioica* β., *L.*: *E. B.* t. 1580.

In dry open situations, cultivated and waste ground, the borders of fields, on hedgebanks and amongst corn, &c., very frequent. *Fl.* June—September. 24.?

E. Med.—Between Sandown and Shanklin, in fields a little beyond the signal-station near Apse heath. Fields by French Mill, near Godshill.

W. Med.—In fields near Afton farm, with white and flesh-coloured flowers.

Capsules yellowish or greenish, ovato-conical, 8—10 lines in length, very smooth, obscurely angular below the middle, hard and firm in texture, opening at the summit by 10 distinct, triangular, lanceolate, erect or spreading, but not recurved, very rigid teeth. *Seeds* numerous, clay-coloured or sometimes reddish gray (black according to Gaudin?), reniform, covered with close rows of rounded or pointed tubercles that are apparently fitted to each other by a toothed ring or border surrounding the base of each.

I am disposed to coincide with many botanists who have recently embraced the opinion of these two plants being really distinct, as Sibthorp imagined. The difference of form in the capsule, and in the localities they affect, both in Britain and on the continent, strongly corroborate the idea. The predilection of *L. diurna* is for cool, moist, shady, alpine situations, of *L. vespertina* for dry, open, champagne and level districts, and the geographical range of each accords with their local distribution.

** *Petals crownless, entire, shorter than the calyx-segments.*

4. *L. Githago*, Lam. *Corn Cockle*. "Calyx much longer than the corolla, petals entire destitute of a crown."—*Agrostemma Githago*, L. *Br. Fl.* p. 61. *E. B.* t. 741. *Githago segetum*, Desf.

In cultivated fields, chiefly amongst corn; much too common. *Fl.* June—August. *Fr.* September. ☉. (or ♂.?)

Root annual? whitish, tapering, hard, brittle and rigid, usually branched in a horizontal direction. *Stem* solitary, quite erect, straight, firm and rigid, from about 1 to 3 or even 5 feet in height, obscurely quadrangular or nearly round, faintly 4-channelled, fistulose, harsh with minute points and asperities, and clothed with long, appressed, jointed pubescence; in the smaller plants simple or nearly so, in the larger branched, often from the very base, in a corymbose paniculate manner, the branches alternate, long, slender, erect, dichotomously forked. *Leaves* opposite, erect, sessile and connate, sheathing, elongato-lanceolate, entire, acute, somewhat folded and almost clasping in their under part, their tips brownish and a little incurved, 3- or towards the base downwards 5-ribbed, the midrib very prominent beneath, rough and hairy like the stem, but the hairs more sparse or scattered, and near the base of the leaves on their upper side longer, silky and spreading. *Bracts* none. *Flowers* large, solitary, terminal on the stem and branches, erect, from $1\frac{1}{2}$ to $1\frac{3}{4}$ inch in diameter, on terete peduncles that are often elongated to a foot or more at the time of flowering. *Calyx* firm, leathery, its tubular portion when in flower ovate-oblong, becoming as the germen swells broader, and in fruit subglobose, densely clothed, as is the incrassated top of the peduncle, with white silky hairs, which are erect and longest on the 10 very thick prominent green ribs or angles; these latter are alternately continued at the summit into 5 linear acute segments, resembling the leaves but flatter and more silky, distantly fringed at the margins, a little unequal, longer than the tube, erect after flowering. *Petals* mostly much shorter than the calyx-segments, but sometimes as long or even longer, cuneate-obcordate, the *limb* varying in intensity of colour from full to dilute purplish rose-red or pink, and marked with 3 or 5 interrupted or dotted purplish or greenish streaks along the course of as many veins, which are very conspicuously prominent on the shining exterior of the petals, that are shallowly and obtusely emarginate; *claws* of the petals about as long as the tube of the calyx, greenish, abrupt, fleshy, without a crown, but having a process running from the base upwards for about half their length, with raised wing-like margins that converge and disappear in the general tissue, forming below a groove for the reception of the shorter filaments. *Stamens* very unequal, glabrous, inserted, as well as the petals, on an annular base immediately under the germen, the five opposite the petals usually much (about half) shorter than the rest, but sometimes part of them are nearly as long; *anthers* slate-gray, oblong-sagittate. *Styles* 5, erect, slender, shorter than the longer stamens, beset with bristly pellucid hairs that are erect at the base, variously spreading on the upper part, which is often purplish and sometimes recurved. *Germen* ovoid-conical, 5-10 angled, glabrous. *Capsules* erect, very large, about an inch long, ovate-conical, pale greenish or brownish yellow, smooth and shining, obscurely 5-angular, 10-ribbed, opening at the summit with 5 rigid teeth, and closely embraced by the much enlarged and hardened calyx, whose segments are then connivent or erect, and much exceeding the capsule. *Seeds* numerous, very large, brownish black, on long erect funiculi,

roundish or triangular-reniform, compressed on the sides and back, covered with close longitudinal rows of very prominent points. *Embryo* in the circumference of the snow-white farinaceous *albumen*.

Like many annuals, this plant is in some degree biennial, for though living but one year, it approaches the true biennials by the growth of radical leaves in autumn, and living through the winter which precedes its flowering, as remarked by Dr. Darlington.

Suborder II. *ALSINÆÆ*.

Sepals distinct or nearly so. Petals and stamens inserted on an hypogynous or perigynous ring. Capsule sessile, 1-celled.

V. *SAGINA*,* *Linn.* Pearlwort.

"*Calyx* of 4 leaves. *Petals* 4 (shorter than the calyx). *Capsule* 1-celled, 4-valved."—*Br. Fl.* 4th ed.

1. *S. procumbens*, L. *Procumbent Pearlwort*. "Perennial usually glabrous, stems procumbent, leaves mucronate, sepals 4 or rarely 5 much longer than the petals spreading in fruit, styles reflexed during flowering."—*Br. Fl.* p. 62. *E. B.* t. 880. *Fl. Dan.* xii. t. 2103.

In waste sandy or gravelly ground, dry pastures, on or under walls and between the paving-stones in streets, courtyards, &c.; very frequent. *Fl.* April—September. 24.

2. *S. apetala*, L. *Annual Small-flowered Pearlwort*. "Annual, stems slightly hairy erect or ascending, leaves aristate fringed, sepals 4 much longer than the petals very spreading in fruit obtuse, or the two outer ones slightly mucronate."—*Br. Fl.* p. 62. *E. B.* t. 880. *Fl. Dan.* xii. t. 2102.

In dry corn-fields, on wall-tops and waste barren ground; frequent. *Fl.* May, June. *Fr.* June. ☉.

Capsules a little longer than the calyx, ovoid, bluntly quadrangular at top, very obtuse, membranous, crowned with the styles. *Seeds* numerous, extremely minute, grayish or purplish black, irregularly prismatic, pyramide-trigonate, the angles and apex rounded; covered with blunt or sometimes pointed warty prominences, and elevated on erect funiculi.

Well distinguished from *S. procumbens* by its ascending, not procumbent stems, paler colour, more slender habit, and by the much longer points to the leaves, which are fringed with a few stiff hairs towards the base. The flowers are smaller than in the last, with narrower much less obtuse calyx-leaves, more broadly membranous at their edges; the styles too are shorter, less spreading and conspicuous. The parts of fructification vary greatly; in numerous specimens collected at Ryde the sepals are ordinarily 4, but often 5, the stamens even in the former case amount to 5, 6, or even more. The petals, which are very minute and spatulate or rather strap-shaped, are sometimes existing, as often wholly or partially wanting. I have occasionally noticed the capsules to be 5-valved.

* See Gibson on the British species and varieties of the genus *Sagina*, 'Phytologist,' No. 9, April, 1842, p. 177.

3. *S. maritima*, Don. *Sea Pearlwort*. "Annual glabrous, stems erect or procumbent only at the base, leaves fleshy obtuse or with a short apiculus, 'petals none,' sepals 4 roundish ovate about as long as the capsule erect in fruit."—*Br. Fl.* p. 63. *E. B.* t. 2195. *Fl. Dan.* xii. t. 2104. *S. apetala* β., *Wahl. Fl. Suec.* i. p. 109.

On the sea-shore and in salt-marshes; rare. *Fl.* May—August. ☉.

E. Med.—On the Dover spit below St. Helen's, in plenty.

W. Med.—Gurnet Bay, sparingly. First found by *Dr. Martin*, immediately below the battery at W. Cowes, on the platform of masonry a foot or two from high-water mark !!!

Capsules in my specimens from St. Helen's as long as the *calyx* or very little exceeding it, being either just concealed by the converging segments of the latter, or exposing its summit only.

Wahlenberg makes our plant a variety of *S. apetala*; but if not really distinct it is surely rather a form of *S. procumbens*, to which all British botanists conceive it to be more nearly related. It presents indeed characters common to both.

VI. SPERGULA, Linn. Spurrey.

"*Calyx* 5-leaved. *Petals* 5, undivided. *Capsule* ovate, 5-celled, 5-valved."—*Br. Fl.* 4th ed.

1. *S. subulata*, Sw. *Awl-leaved Spurrey*. "Leaves subulate subciliated aristate, peduncles solitary very long and the calyx glandular-hairy, petals and capsule somewhat longer than the calyx."—*Br. Fl.* 4th ed. *E. B.* t. 1082. *Sagina*, *Wimm.*: *Br. Fl.* 6th ed. p. 63. *Sagina procumbens* β., *L.*

On elevated sandy, gravelly, or stony heaths, moors and pastures; rare? *Fl.* May—August. *Fr.* July. 24.

E. Med.—Corn-field near Shanklin, *Miss E. Kirkpatrick*. Gravel-pit on St. George's Down, *G. Kirkpatrick, Esq.* Bare gravelly spot on Bleak Down, in tolerable plenty.

W. Med.—On Headon hill.

It is extremely doubtful whether this be anything more than a var. of *S. saginoides*, which is common on mountains in the North. (See the remarks of Hook. in *Br. Fl.* l. s. c.) *Linnaeus* thought it a variety of *Sagina procumbens*.

2. *S. nodosa*, L. *Knotted Spurrey*. *Sand Chickweed*. Leaves subulate opposite glabrous connate, the lower ones sheathing much the longest, upper ones with axillary leafy clusters, petals much longer than the calyx. *Sm. E. Fl.* ii. p. 338. *E. B.* x. t. 694. *Curt. Fl. Lond.* ii. fasc. 4, t. 34. *Sagina*, *Br. Fl.* p. 64.

In moist sandy, gravelly and turfy pastures, but not common. *Fl.* July, August. 24.

E. Med.—On St. Helen's spit, scattered sparingly amongst the furze.

W. Med.—By a small pool (salt-marsh) near the Yar, at the N.E. end of Wilmington heath, but confined to a very limited spot. Plentiful at Freshwater Gate, near the entrance on the marsh, in wet ground on the left just before coming to the gate from the beach. Shore at Norton. Marsh near Compton, *Mr. Snooke*.

Root whitish, fibrous. *Stems* several, 3 or 4 inches high, either prostrate, ascending or decumbent at the base, a little hairy above, glabrous below, simple or branched. *Leaves* connate, awl-shaped, smooth, flattish or a little hollowed on the upper, convex on the under surface, tipped with a minute callous point, but not mucronate, lowest ones much the longest and spreading, gradually shortening

as they ascend, and bearing branches or small clusters of leaves in their axils. *Flowers* rather large, white, few, solitary, terminal on the principal and lateral branches. *Sepals* ovate, nerveless, very blunt, much shorter than the petals, with whitish membranous edges. *Petals* rounded, quite entire, with short abrupt claws, only fully expanded in bright weather. *Stamens* extremely short, with pale anthers. *Styles* spreading; *stigmas* revolute, beautifully fringed. *Capsules* seldom perfect (*Sm.*), ovate. "Seeds brown, wrinkled," (*M. et K.*)

3. *S. arvensis*, L. *Corn Spurrey*. "Leaves whorled with minute membranaceous stipules at their base, stalk of the fruit reflexed, seeds more or less margined."—*Br. Fl.* p. 145. *E. B.* t. 1535. *S. pentandra*, *Sm. E. B.* t. 1536.

In cornfields and other cultivated ground, on a light sandy soil; abundantly. *Fl.* May—August. ☉.

VII. MŒNCHIA, Ehrh. *Mœnchia*.

"*Calyx* of 4 sepals. *Petals* 4, entire. *Stamens* 4 or 8. *Styles* 4. *Capsule* of 1 cell, many-seeded, opening with 8 teeth at the extremity."—*Br. Fl.*

1. *M. erecta*, *Sm. Upright Mœnchia*. *Br. Fl.* p. 70. *Sagina*, L.: *E. B.* t. 609.

In dry sandy, gravelly and turfy pastures, on high heaths and downs; frequent. *Fl.* April, May. *Fr.* May, June. ☉.

E. Med.—On Royal Heath, in many places. On the sea-bank at Sandown, near the Fort. On Bleak Down in plenty, with *Spergula subulata*. On St. Helen's spit, abundantly. Shanklin down. St. George's Down.

W. Med.—Abundant on all the sandy heaths and commons about Brixton, Mottistone and Shorwell, as well as on the downs. Plentiful on heaths between Shorwell and Kingston (Haslett and Buck's heath, &c.), where the ground is whitened by it in some places. Gurnet Bay, *Miss G. Kilderbee*.

Root annual, of several very slender branched fibres. *Stems* several or solitary, erect or ascending, the lateral ones sometimes decumbent at the base, round, 2—4 inches in height, simple or slightly branched, firm, quite smooth, as is the whole plant, and sometimes tinged with purple. *Leaves* opposite and connate at their base, linear-lanceolate, a little acute, very stiff and glaucous, single-ribbed, remote on the stem, those at the root more crowded and caespitose, tapering into a long petiole soon withering. *Flowers* solitary, on terminal and axillary peduncles, erect, not opening very widely. *Sepals* taper-pointed, very acute, with a white membranous border and a stout central green nerve. *Petals* white, obtuse, about $\frac{1}{2}$ shorter than the calyx, a little recurved at the tip. *Stamens* on a jointed base as in *Stellaria*. *Styles* short; *stigmas* reflexed, covered with long crystalline points, and hence appearing plumose. *Capsule* oblongo-conical, variable in length, usually about equal to the enclosing calyx, membranous, 8-ribbed and somewhat octagonal, tipped with the styles, opening by 8 slightly recurved teeth, the dehiscence often partially continued to the base of the ribs or sutures. *Seeds* numerous, pale reddish brown, subreniform, laterally compressed, covered with warty granulations and attached to a free central receptacle which is much shorter than the capsule.

VIII. STELLARIA, Linn. *Stitchwort*.

"*Sepals* 5. *Petals* 5, deeply cloven. *Stamens* 10. *Styles* 3. *Capsule* opening with 6 valves, many-seeded."—*Br. Fl.*

1. *S. media*, With. *Common Chickweed*. "Leaves ovate lower ones petiolate upper ones sessile, stems with an alternate line of

hairs on one side, petals 2-partite, stamens 5—10." — *Br. Fl.* p. 68. *E. B.* t. 537. Alsine, *L.*

β. Leaves fleshy.

γ. *apetala*. Much smaller, calyx very hairy, seeds smoother, thinner and paler. *S. alsinoides*? *Schleich.*, *Br. Fl.* 5th ed. p. 37.

In waste and cultivated ground, fields, gardens, woods, and on hedgebanks everywhere, one of the commonest of weeds. *Fl.* the whole year, but most copiously in the spring and summer months. ☉.

β. On waste ground by the sea, Sandown.

γ. On sandy ground, Ryde Dover. Abundant on St. Helen's spit. On walls near Niton.

A most variable plant, affording ample scope to the founders of new species for the exercise of ingenuity in detecting subtle and evanescent marks of distinction.

The var. γ. exactly coincides with Mr. Drummond's description in the 'British Flora,' and would seem from the citations of Gaudin and others to be the *S. alsinoides* of Schleicher. The flowers are quite destitute of petals and triandrous in my specimens, the calyx, which appears always to be closed, is beset with copious, long, white, soft hairs. Seeds very pale buff-yellow.

The common Chickweed is one of those cosmopolite plants that accommodate themselves to almost any soil or climate. It is widely dispersed over the temperate zone of the northern and many parts of the southern hemisphere. I found it in every part of the United States as abundantly as in Europe, though perhaps more restricted there to cultivated and inhabited spots, it being supposed to have accompanied the white race in their migration westward.

Perhaps the plant called *S. grandiflora* by Mr. J. Woods in his 'Tour in Brittany' (Hooker's Comp. to the Bot. Mag. vol. ii. p. 264), and found I understand in Sussex, is the *S. neglecta* of Weihe, *Fl. Dan.* 438, *vide* Reichenb. *Fl. Germ. excurs.* No. 4905.

2. *S. holostea*,* *L.* Greater Stitchwort. "Stem nearly erect with 4 rough sharp angles, leaves lanceolate much acuminate minutely ciliated sessile, petals cloven to the middle twice as long as the nerveless calyx." — *Br. Fl.* p. 68. *E. B.* t. 511.

β. Petals scarcely equalling the calyx, deeply divided almost to the base into 3 segments, of which the middle one is linear-lanceolate, the 2 exterior ones with a tooth on the inner side.

In grassy woods, thickets, groves, along hedges and on shady banks, abundantly. *Fl.* April—June. 24.

β. In Quarr copse.

Capsules depressed, membranous and globose, pellucid and tipped with the styles; the summits of the 6 valves are reflexed in the ripe capsule, appearing as so many teeth, but the valves themselves separate nearly to the base.† Seeds several, roundish kidney-shaped, compressed, covered with mamillary points in close parallel rows, some of them usually abortive.

Of the curious variety β. I found a good many specimens, and at first imagined the lacinated appearance of the petals to have resulted from mutilation by insects, until the regularity of the monstrosity in all which I traced in the bud proved it to be the work of Nature herself. In this state the flowers bore some resemblance to *S. uliginosa*. A very similar form of the petals, if not the very same, is recorded in the 'Phytologist' for July, 1842, as found near Pont-y-Pool.

3. *S. graminea*, *L.* Lesser Stitchwort. "Stem angled nearly erect smooth, leaves linear-lanceolate acute entire glabrous

* The specific name ought rather perhaps to have been *Holosteum*.

† In *Silene* the dehiscence is strictly confined to the top of the capsule, which else appears of one piece.

ciliated, panicle much branched, petals bipartite scarcely longer than the 3-nerved sepals."—*Br. Fl.* p. 69. *E. B.* t. 803.

β., *Gaud. Fl. Helv.* iii. p. 185. Petals much longer than the calyx; leaves more or less glaucous.

In dry gravelly, sandy or heathy pastures, hedgerows and bushy places; very common. *Fl.* May—August. 24.

Capsule ovoid-oblong, smooth, shining and membranous, as long as or rather longer than the calyx, 6-angled at the summit. *Seeds* few, about 8 or 9, pale rusty red, roundish and subreniform, compressed.

The petals are not rarely double the length of the calyx, as I find them in several parts of the island, in which state the plant is likely to be gathered for *S. glauca*, as indeed happened to myself, and against which mistake Gaudin warns his countrymen, *S. glauca* being extremely rare in Switzerland.

4. *S. uliginosa*, Murr. *Bog Stitchwort*. "Leaves ovato-lanceolate entire with a callous tip, flowers in dichotomous panicles, petals bipartite shorter than the sepals which are combined at the base."—*Br. Fl.* p. 69. *E. B.* t. 1074. *S. graminea β.*, *L.* *Lar-brea*, *St. Hil.*

In clear shallow ditches, rivulets and boggy or springy places; frequent. *Fl.* May—July. *Fr.* July. ☉.

E. Med.—In a patch of copsewood a little South of Upton House. Very common in moory meadows about Bridge Court, and in the willow-beds by Bagwich in profusion. Rookley moors, and common in the valley of the Medina generally. Boggy parts of Apse heath. Sandown level. Shanklin chine. Abundant on wet slipped banks in Whitecliff bay. In a very wet part of Marshcombe Copse, near Yaverland farm. In a wet hollow on the skirts of Wootton common, in plenty. Parsonage Lynch, Newchurch.

W. Med.—Under a wet hedgebank between Gurnet Bay and the Debbourne turnpike, in very great plenty. Wet places about Shorwell, at Wolverton, Brixton, &c., frequent.

Herb perfectly glabrous, except at the base of the leaves and occasionally on the edge of the sepals. *Root* a tuft of pale, weak, slender fibres. *Stems* numerous, variable in length, from about 6 to 12 or 18 inches, widely spreading, decumbent and ascending at the extremities in the smaller plants, suberect or reclining, weak, brittle and succulent, with a central medullary fibre, acutely quadrangular, smooth and glabrous, rooting at the lower articulations, branched alternately. *Leaves* numerous, opposite, sometimes 3 or 4 together at the forks of the branches, somewhat erect, sessile, scarcely an inch in length at most, pale with a glaucous cast, and as it were mottled with a network of anastomosing veins of a deeper green; lower leaves mostly oblongo-elliptical, bluntish, those near the summit oblong or elliptic-lanceolate and more acute, all with a brownish callous tip, connate and slightly ciliated at base, paler beneath, with a sharp prominent midrib, their margins often reflexed. *Flowers* very small, few together, in axillary, seldom terminal irregularly forked panicles, sometimes solitary. *Peduncles* mostly longer than the leaves, often 2 or 3 together, one of them simple or bearing only a single flower at its apex; *pedicels* very unequal. *Bracts* at the base of the peduncles and partial flower-stalks, opposite, lanceolate, scariose and acute, with a central green nerve. *Calyx* about 3 lines in diameter; *sepals* lanceolate, very acute, with 3 strong deep green ribs and white scariose entire margins, flat and widely spreading in flower, now and then, it is said, ciliated, smooth in my specimens, united below into an angular inverted cone or tube surrounding the germen and looking like an enlargement of the pedicel. *Petals* white, delicate and pellucid, veinless, inserted on a green glandular ring close behind the stamens, much shorter the calyx (now and then wanting, *Bertol.*), obcordate, cleft nearly to the base into two spatulate, diverging, entire segments which are obtuse or slightly pointed. *Stamens* 10, those alternating with the petals inserted on short, yellow-

ish, flattened glands near but not close to the base of the germen, being in fact above the latter and at the top of the conical enlargement of the calyx below the sepals, hence truly perigynous, not hypogynous; *filaments* white, tapering, not winged or dilated; *anthers* pale yellow, roundish. *Styles* 3—5 (very often 4), white, glanduloso-pilose above, spreading and recurved; *germen* ovato-globose, its lower part embraced by the fleshy conical base of the calyx or summit of the pedicel, but unconnected with the latter. *Capsule* pale yellowish brown, smooth and shining, as long as or mostly rather longer than the calyx, oblong-ovoid, a little attenuated at base where it is surrounded by the funnel-shaped part of the calyx, 6-angled above the middle, bursting by as many entire, pointed, finally recurved valves for at least half its length.

IX. MALACHIUM, *Fries.* Mouse-ear Chickweed.

"*Sepals* 5. *Petals* 5, deeply cloven. *Stamens* 10. *Styles* 5, alternate with the sepals. *Capsule* opening with 5 valves opposite to the sepals, each bifid at the apex, many-seeded."—*Br. Fl.*

1. *M. aquaticum*, Fr. *Water Chickweed.* *Br. Fl.* p. 67. *Cerastium*, L.: *E. B.* t. 538.

β. Stem somewhat scandent. *Cerastium scandens*, *Lej. Fl. de Sp.* pars i. p. 211.

In low marshy places, on ditch-banks, by river sides, in swampy thickets and damp hedges, mostly in the centre of the island. *Fl.* July—October. 24.

E. Med.—In the wet grounds W. of Yaverland farm. Common on the moors close to Godshill, on the North side. Near Stickworth house. In many parts of Sandown level, on the banks of the drains or ditches dividing the meadows, and very abundant along the stream that intersects the level and empties itself into Brading harbour, as above Alverston and between that and Horringford bridge, above which it is again plentiful, also in wet thickets by the same stream opposite Alverston and Hasely, &c. Little wood close to Deane farm, and at Whitwell. Abundant along the mill-stream between Bridge and Bridge Court, near Godshill. Moist ground at the foot of Furze Hill, near Wackland. Wet meadow near Fullford.

W. Med.—Marshy meadows along the Medina above Newport in various places, also a little below Shide, sparingly.

β. In wet hedgerows betwixt Alverston and Horringford bridge, the weak erect stems reclining against those of other plants rather than climbing.

A succulent somewhat viscid plant, with the habit and appearance of *Stellaria media*, and still more so of *S. nemorum*, for which it is sometimes mistaken. *Root* very slender, fibrous, creeping. *Stems* numerous, trailing or decumbent, purplish, geniculate and rooting below at the joints, their bases becoming at length covered with earth and rhizomatous, erect or ascending at the extremities, and rising to 1 or 2 feet or even more in height when supported by herbage or bushes, subterete, faintly angular or ancipital, composed of an exterior, very brittle and succulent parenchyma surrounding a tough, striated, tubular chord; considerably branched and dichotomously forked at top, glabrous below, clothed above with soft, spreading, gland-tipped pubescence extending over the bracts, peduncles and calyx. *Leaves* opposite, pale green, thin, flaccid and moist to the touch, very speedily withering; those of the flowering stems larger, quite sessile, of the barren shoots smaller and on stalks of various length; all ovate, acuminate, very acute, rounded or broadly cordate at base, wavy on their margins, paler and conspicuously veined beneath, the inferior leaves glabrous or nearly so, those near the summit of the stem more or less pubescent on both sides and ciliated. *Flowers* rather large and handsome, in a sort of dichotomous false panicle, if the uppermost leaves be considered as bracts, produced in long succession, and quickly fading when gathered. *Peduncles* single-flowered, lateral and terminal from the forks of the stem at its upper part, terete, pubescent, finally spreading and deflexed in

fruit, the apex a little enlarged and nodding. *Calyx* cleft nearly to the bottom, hairy externally; *sepals* ovate-lanceolate, mostly unequal in breadth, 3- or 5-ribbed, slightly keeled, with concave, somewhat incurved, bluish tips and more or less narrowly membranous white margins. *Petals* a little longer than the calyx, pure white, very profoundly cleft into 2 narrow, oblong, obovate, entire, strongly and prominently nerved segments, the sinus between them obtuse at the top of the small, green, fleshy, abrupt claw. *Capsule* ovate-conical (sometimes described as round), 4 or 5 lines in length, nodding, very thin and membranous, as long as or mostly rather longer than the closely applied calyx, shining and glabrous, bluntly pentagonal, opening at the summit by 5 broad, erect, often bifid, obtuse teeth. *Seeds* numerous, reddish brown, rotundato-reniform, rough with close rows of papillæ with stellate or radiating bases.

X. CERASTIUM, Linn. Mouse-ear Chickweed.

"*Calyx* of 5 sepals. *Petals* 5, cloven. *Stamens* 10. *Styles* 5. *Capsule* bursting at the top with ten equal teeth."—*Br. Fl.*

1. *C. glomeratum*, Thuill. *Broad-leaved Mouse-ear Chickweed*. "Hairy nearly erect viscid above, leaves ovate, bractæas herbaceous, petals as long as the calyx about half the length of the curved capsule, flowers mostly subcapitate, calyces oblong longer than their pedicels."—*C. vulgatum*, L. *Br. Fl.* p. 70. *E. B. t.* 789.

In fields, pastures, waste and cultivated places, on walls, dry banks, and by roadsides; common. *Fl.* April—September. ☉.

2. *C. triviale*, Link. *Narrow-leaved Mouse-ear Chickweed*. "Leaves oblong-lanceolate, stem hairy viscid spreading, lower bractæas herbaceous upper ones with narrow membranous margins, flowers at first almost fascicled afterwards in elongated dichotomous cymes, calyx about as long as the pedicel and corolla about half the length of the curved fruit."—*C. viscosum*, L. *Br. Fl.* p. 70. *E. B. t.* 790.

In exactly similar situations with the last, and equally common. *Fl.* Spring and summer. ♀? or rather ☉.

I very seldom perceive any membranous border to the bractæas of *C. triviale* in this neighbourhood (Ryde); the character therefore not being constant ought not to enter into the specific description.

3. *C. semidecandrum*, L. *Little Mouse-ear Chickweed*. "Leaves ovate or oblong, stem hairy viscid suberect simple bearing a few-flowered cyme, upper half of all the bracts and the sepals membranous, calyx scarcely shorter than the pedicel about twice as long as the petals shorter than the fruit."—*Br. Fl.* p. 71. *E. B. t.* 1630.

β. *Sm.* Flowers larger, less numerous and scarcely paniced; petals distinctly bifid, but not deeply cleft, not a great deal shorter than the taper-pointed sepals. *C. pumilum*, *Curt. Fl. Lond.* ii. fasc. 6, t. 33. *C. glutinosum*, *Fries?* *Nov. Fl. Suec.* ed. alt. p. 132. *Reichb. Iconogr. Bot.* ii. tab. 181, fig. 315 and 316?

γ. Flowers smaller (at least in bloom) or conglomerate; petals notched or jagged, scarcely torn, much shorter than the very long acute and membranous sepals. Bracts scariosæ, shining and membranous at the margins. *E. B. xxiii. t.* 1630? *Leight. Skrop. Fl.* p. 198.

In waste ground, on wall-tops and other dry sandy places. *Fl.* March—May.

⊙.

Plentiful on the Dover, Ryde.

β. Abundant on the sandy fence of the garden behind the ferry-house, St. Helen's spit.

A smaller plant than *C. triviale*, if it be really distinct from that species, and flowering earlier. Root annual, whitish, slender and fibrous. Stem very variable in length, usually but a few inches high, branching from the base dichotomously (or simple, Sm.) in all my specimens, spreading or procumbent, at length erect (*Leight.*), purplish, clothed in different degrees with spreading, viscid, partly gland-tipped hairs, the latter most numerous on the flower-stalks. Leaves of a paler green than in *C. triviale*, otherwise similar, very hairy, the lower mostly smoother and a little shining, spatulate, the upper ovate or oblong. Flowers in small terminal panicles that are more or less branched (in the specimens I am describing, which I take to be the *C. pumilum* of Curtis with larger flowers and more deeply cloven petals, much less so than that figured in E. B.), partly pedunculate, partly sessile or nearly so, their peduncles very various in length, elongating during inflorescence. Bracts in all my specimens of β. destitute of a scarious border, in γ, which I look upon as the *C. semidecandrum* of Smith and 'English Botany,' thinner, with broad very shining edges, of a silvery whiteness, very acute and jagged. Sepals in β. but little exceeding the petals, sometimes about equal to them; in γ. much longer than these, with far more acuminate tips and broader, somewhat jagged. Petals mostly 5, not unfrequently but 4, and in that case either tetrandrous with 4 styles, or pentandrous with the same number of styles in β., but little shorter than the calyx or equal to it, and deeply notched or cleft about $\frac{1}{2}$ of their entire length; in γ. much shorter than the sepals, narrower, greenish white and simply notched, or irregularly jagged here and there, but not cleft.

A most variable and perplexing plant, on the different forms of which botanists have wasted much time and ingenuity by endeavouring to find permanent marks of distinction where none exist. We need but peruse and compare the descriptions and figures of those who have laboured the most to elucidate our common *Cerastia*, to be convinced that not one has seized upon any absolutely fixed mark of distinction between *C. triviale*, *C. semidecandrum* and *C. tetrandrum*; the very multiplicity of their synonyms and the elaborate commentary of Fries (*Nov. Fl. Suec.*), who has augmented the difficulty of their study still further by increasing the number of species, prove how little writers have advanced in assigning to each its proper limits.

Sir J. Smith remarks that *C. semidecandrum* displays itself in early spring on every wall-top, and withers away long before *C. triviale* begins to put forth its far less conspicuous blossoms. At Ryde, however (at least in the extraordinary backward season of 1837), these two species, with *C. tetrandrum*, were all in flower together, when I remarked the little tetrandrous plant was earlier out of flower than the larger semidecandrous one, and both considerably in advance of *C. triviale* in respect to the time of seeding.

I find specimens possessing the characters of *C. semidecandrum* with 4-cleft calyx and corolla, yet with 6 or 7 stamens in each flower.

4. *C. tetrandrum*, Curt. *Four-cleft Mouse-ear Chickweed.* "Leaves ovate or oblong, stem hairy and somewhat viscid dichotomous with flowers in the forks, the whole a leafy cyme, lower bractæas herbaceous some of the uppermost and the sepals with a narrow membranaceous margin, calyx rather longer than the petals $1\frac{1}{2}$ —4 times shorter than the pedicels, fruit usually the length of the calyx rarely a little longer."—*Br. Fl.* p. 71. *C. atrovirens*, Bab. *C. pedunculatum*, Bab. *Sagina cerastoides*, E. B. t. 166.

ρ. *Wahlenb. Fl. Suec.* ed. prim. i. p. 288, No. 519?

On dry banks, wall-tops, sandy heaths and pastures; very frequent. *Fl.* March—May. ☉.

E. Med.—Abundant on sandy ground of the Dover, Ryde, and on the spit below St. Helen's. On the embankment of the sea-wall at Sandown, opposite the fort.

W. Med.—Common on most of our high downs. Afton down, by the sea, *Mr. Snooke*. High downs at Freshwater, *Dawson Turner, Esq.* in *Snooke's Bot.* of the I. of Wight.

♂. Scarcely an inch high. On the Dover, Ryde, and the spit below St. Helen's, abundant. On the sea-bank at Sandown fort, &c.

In my Ryde specimens the margins of the *calyx-leaves* vary extremely in breadth even in the same plant, they are mostly broader on the alternate segments, at one time this membranous border is very wide, at another nearly or quite obsolete. *Flowers* far most frequently 4-cleft with 4 stamens and 4 styles, sometimes 5-cleft with 5 stamens and 4-cleft on the same plant, and not unfrequently I find 4-cleft flowers with 5 stamens and only 4 styles. The hairs on the calyx, &c., are not always glandular; the bracts are certainly not at all scarious in any of my specimens; this is also remarked by *Mr. Jos. Woods* in his 'Tour in Brittany.'* In dry open and turfy spots this plant scarcely rises above the surface, and is conspicuous only by its white petals disposed in the form of a cross.

My own impression, after much careful investigation, now more confirmed than ever, is that *C. tetrandrum*, as I understand it, is a dwarf maritime state of *C. semidecandrum*, which last *Mr. W. Wilson* suggests, I think with great probability, may itself prove to be an early flowering form of *C. triviale*, as it is difficult to assign a character to one that is not occasionally assumed by the other. *Mr. Wilson* however retains *C. tetrandrum* as a good species. For my own part, I am not without doubts whether *C. glomeratum* and *C. triviale* may not be the same species under different forms.

XI. HALIANTHUS, *Fries.* Sea Chickweed.

"*Flowers* polygamous. *Sepals* 5. *Petals* 5, conspicuous, undivided. *Stamens* 10, alternating with glands: *anthers* abortive in the fertile flowers: *ovary* with 3—5 styles, abortive when the anthers are perfect. *Capsule* opening with 3—4 entire valves, or with 5 alternate with the sepals. *Seeds* 8—10, large."†

1. *H. peploides*, *Fries.* *Sea Chickweed*. "Sepals ovate obtuse with scarious margins, petals obovate, leaves ovate acute and stems very fleshy."—*Honckenya* (*Ehrh.*) *Br. Fl.* p. 65. *Arnararia*, *L.*: *E. B.* t. 189. *Alsine*, *Wahl.*

On sandy and pebbly sea-shores, and on waste ground adjacent to the sea. *Fl.* April—July. *Fr.* July, August. 24.

Whole herb very smooth and succulent, growing mostly in round tufts or patches a few inches high only. *Root* long, slender, chordiform, whitish or reddish, running pretty far under the sand or pebbles, and emitting at intervals bundles of flowering stems that are whitish or purplish, naked and decumbent at the base, enlarged upwards, their extremities erect or inclining, shortly branched and leafy, with a lateral groove or furrow on opposite sides, alternating with the position of the leaves, beneath each pair of which the stem is a little swollen. *Leaves* numerous, opposite, decussate, sessile, subconnate, ovate or ovate-elliptical, yellowish green, thick, fleshy and shining, acute and mucronate, the tips a little recurved, slightly keeled beneath and edged all round with a pellucid crenate

* *Hooker's Comp. to Bot. Mag.* ii. p. 263.

† [Gen. character of *Honckenya* in 5th ed. of *Br. Fl.*, *Edrs.*]

expansion of their substance. *Stipules* none. *Flowers* solitary, either in the axils of the upper leaves opposite the short nascent shoots, and hence appearing to be 2 or 3 together, or else in the forks of the upper branches on short much-compressed and furrowed pedicels. *Sepals* oblongo-elliptical, obtuse, concave, gibbous at the back, obscurely 3-nerved when viewed with a glass against the light, green, with white entire margins. *Petals* white, very small, not exceeding the calyx, obovate, entire or occasionally bifid in the same flower, suddenly tapering into the long narrow claw. *Stamens* 10, the alternate ones longer, more spreading, and discharging their pollen earlier than the other five; *anthers* nearly white. Alternating with the stamens, and in a line with them, are as many yellow oblong *glands*, projecting from a fleshy ring surrounding the conical obtuse germen. *Styles* 3, short, fleshy and tapering. *Capsules* large, coriaceous, greenish yellow, glabrous, much longer than the calyx, depresso-globose, obtusely lobed, furrowed, subconical at the summit and a little pointed, tipped with the styles, 3—5 valved. *Seeds* usually about 6 (sometimes only 2 or 3), rich chestnut-brown and very shining, ovate and pointed at one end, in shape, size and colour extremely like the pips of apples, finely granulato-punctate.

XII. ARENARIA, Linn. Sandwort.

"*Flowers* all perfect. *Sepals* 5. *Petals* 5, conspicuous, undivided. *Stamens* 10, or occasionally 5. *Styles* 3—4. *Capsule* 1-celled, opening with 3—5 entire valves (alternating with the sepals when as many); or with 6—10 valves (or teeth). *Seeds* many, minute."—*Br. Fl.*

* *Stipules* none.

1. *A. trinervis*, L. *Three-ribbed Sandwort*. "Leaves ovate acute petiolate 3- (rarely 5-) nerved ciliated, flowers solitary, sepals rough on the keel with 3 obscure ribs, hilum of the seeds with an appendage."—*Br. Fl.* p. 67. *E. B. t.* 1483. *Mœhringia*, *Clairv.*

In damp woods, groves, and on moist or shady hedgebanks; abundantly. *Fl.* April—June. ☉.

2. *A. serpyllifolia*, L. *Thyme-leaved Sandwort*. "Leaves ovate acute subscabrous sessile, calyx hairy its outer sepals 5-ribbed about as long as the corolla."—*Br. Fl.* p. 67. *E. B. t.* 923.

In dry batten or sandy fields and waste ground, on walls, banks, &c., very common. *Fl.* June—October. ☉.

Root small, whitish, copiously branched and fibrous. *Stems* numerous, spreading, ascending or procumbent, repeatedly and dichotomously branched from the base, slender, and hoary with copious white hooked and deflexed hairs. *Leaves* much like those of wild Thyme, $\frac{1}{4}$ inch long, grayish green, stiffish, opposite, sessile, very broadly ovate, acute, 5-nerved, occasionally sprinkled with pellucid dots, their edges spinuloso-ciliate, otherwise glabrous or nearly so. *Stipules* none. *Flowers* small, white, solitary, on straight, diverging, hairy peduncles, which are a little longer than the leaves, and springing laterally at the forks of the stem, but not in the axils of either. *Sepals* lanceolate, very acute, more or less hairy, with white membranous edges that are broader on the 3 inner and 3-ribbed than on the 2 exterior and 5-ribbed ones, (Smith describes the 2 innermost as 3-ribbed only). *Petals* very small, obovate, quite entire, very variable in length, usually much shorter than the calyx, not above $\frac{1}{2}$ or sometimes $\frac{1}{4}$ its length. *Stamens* 5—10, those alternating with the sepals placed on a projecting glandular base, 5 of them shorter and apparently carrying abortive anthers; *anthers* white or pale

red; pollen of white pellucid globules. *Styles* 3, nearly erect; *ovarium* subglobose, with 6 greenish ribs. *Capsule* thin, conical, obtuse, opening with 6 teeth, 6-ribbed. *Seeds* several, brownish, reniform, covered with warty granulations.

**** Leaves stipulate.**

3. *A. rubra*, L. *Purple Sandwort*. *Purple Spurrey*. "Stems prostrate, leaves narrow linear acute plane scarcely fleshy tipped with a short bristle, stipules ovate cloven, capsule as long as the calyx, seeds compressed angular roughish."—*Br. Fl.* *E. B. t.* 852. *Spergularia*, *St. Hil.*: *Br. Fl.* p. 144. *Alsine*, *Wahl.*

In dry gravelly or sandy fields and pastures, on walls, cliffs, ledges of rocks and waste ground; common. *Fl.* June—September. ☉. or 24.?

E. Med.—Abundant on Royal Heath. Profusely on rocky ledges behind Bonchurch, with *Crithmum maritimum*. About Sandown, plentifully, *Mr. Snooke*. Common on Bleak Down.

W. Med.—Chalk cliffs at Freshwater Gate. Near the Debbourn farm, *Miss G. Kilderbee*!

The plant in maritime situations preserves its character as regards the shape and roughness of the seeds, length of capsule and aristate leaves, but the latter are semicylindrical beneath or nearly so, the herb very much branched, forming dense tufts, the root thick (perennial?), and as well as the base of the stems subligneous. This form accords with the description of *A. macrorrhiza*, *Reg.* in *Bertol. Fl. Ital.* iv. p. 687. *A. rubra* γ. *macrorrhiza*, *Moris. Fl. Sard.* i. p. 278. *A. media* β. *macrorrhiza*, *DC.* in *Duby, Syn.* ii. p. 1025, and which *Moris* very judiciously considers a mere variety, assigning very sufficient reasons for his opinion.

4. *A. marina*, Sm. *Sea Spurrey*. "Stems prostrate, leaves semicylindrical fleshy usually with a short point, stipules ovate cloven, capsule longer than the calyx, seeds compressed."—*Br. Fl.* *Spergularia*, *Camb.*: *Br. Fl.* p. 45. *E. B. t.* 958. *Arenaria media*, L. *Alsine*, *M. et K.*

In salt-marshes and on waste ground near the sea; very common. *Fl.* June—August. ☉.

Order XIV. LINACEÆ, *DC.*

"*Sepals* 4—5, imbricated in æstivation, persistent. *Petals* 4—5, with a twisted æstivation, very fugacious. *Stamens* 4—5, united at the base into an hypogynous ring, with small teeth (abortive stamens) between them. *Ovary* with 3—5 cells, and as many *styles*. *Stigmas* capitate. *Capsule* globose, crowned with the permanent base of the styles, 3—5 celled; each cell partially divided into 2 by a spurious dissepiment, and opening with 2 valves at the apex. *Seeds* 1 in each spurious cell, inverted. *Embryo* straight, large, thin, with little or no *albumen*.—*Mostly* herbs, *with entire leaves and without stipules*."—*Br. Fl.*

I. LINUM, Linn. Flax.

Sepals 5, persistent. *Petals* 5. *Stamens* 5. *Styles* 5. *Seeds* ovate, compressed.

* *Leaves* alternate. *Flowers* blue.

*1. *L. usitatissimum*, L. *Common Flax* or *Lint*. Stem subso-litary erect corymbosely branched above, leaves linear-lanceolate the lowermost broader obtuse, sepals ovate pointed 3-nerved, cap-sule nearly spherical subacuminate mucronate, root annual. *Br.* *Fl.* p. 74. *E. B. t.* 1357.

In cultivated and waste ground, amongst corn, &c., accidentally introduced, but very rarely. *Fl.* July, August. *Fr.* August, September. ☉.

E. Med.—In a sandy cornfield immediately facing Cliff farm, near Shanklin, in considerable plenty. [In a field near Bembridge farm, *A. G. More, Esq.,* Edrs.]

W. Med.—About Kennerley, *Mr. W. D. Snooke*.

Herb quite glabrous. *Root* annual, woody, whitish and tapering, with a few lateral fibres or branches, sometimes nearly simple. *Stem* from about 1½ to 2 feet in height, mostly solitary, sometimes (as in nearly all my specimens) 2 or 3 from the same root, round, leafy, straight, erect, filled with cellular tissue, branched only towards the summit in a corymbose form, the branches nearly upright, straight, simple or again slightly ramified at top. *Leaves* pale grayish or glaucous-green, very numerous, scattered, erect or partly spreading or patent, sessile and quite glabrous, entire, with rough, cartilaginous, subserrated margins, those about the centre of the stem often about an inch and a half long, the lowermost shorter, ovate or elliptic, more or less obtuse, deciduous, the rest linear-lanceolate, very acute, with 3 mostly very distinct ribs, of which the 2 lateral disappear before reaching the point. *Peduncles* single-flowered, terminal, axillary or opposite, lax or drooping in bud, erect and variously elongated in flower and seed. *Flowers* much larger and brighter coloured than in *L. angustifolium*. *Sepals* broadly ovate (2 exterior shorter than the rest), concave, mucronate, acuminate, 3-nerved, the lateral nerves rather obscure, the median one forming a prominent rough cartilaginous keel at the back; the margins of all broad, white and membranous, and of the 3 interior especially fringed or jagged, but not glandular, those of the 2 outer nearly or quite entire. *Petals* cuneate, obovate, about ½ an inch long and 2½ or 3 times longer than the calyx, with whitish somewhat pointed claws, palish blue but much brighter than in *L. angustifolium*, streaked with converging cærulean lines towards the claw, crenate along their superior margin, very fugacious. *Stamens* converging, their white flat filaments dilated, and combined at base with 5 intermediate rudimentary ones; *anthers* and their globular *pollen* light blue. *Styles* erect, twisted together, rather shorter than the stamens, bluish. *Germen* ovate, globose. *Capsules* pale brown, much larger than in *L. angustifolium*, almost perfectly spherical, very shortly and suddenly acuminate, mucronate, glabrous, about as long (twice as long, *Bertoloni*) as the calyx. *Seeds* about twice as large as in *L. angustifolium*, similar in shape and colour, very glossy.

The present species is stouter, not so wiry and less branched than the following; the relative length of the petals is alike in both, neither can I perceive any constant or material difference of form in the sepals between the two species.

2. *L. angustifolium*, Huds. *Narrow-leaved pale Flax*. Stems numerous mostly diffuse variously and unequally branched, branches lax spreading or divaricate, sepals ovate elliptical sub-ciliate acuminate about as long as the subglobose mucronate

acuminate capsule, leaves alternate all linear or linear-lanceolate very acute 3-nerved, root perennial. *Br. Fl.* p. 74. *E. B.* t. 381.

In dry sandy, gravelly or chalky fields, pastures and waste places, on banks, by roadsides and along hedges; very frequent. *Fl.* May—October. 24.

E. Med.—Plentiful in fields and pastures about Bembridge. About Ryde in various places, as Binstead, near Westridge, and along the road to Ashy. Field near the Ventnor hotel, Springfield. Between Sandown and Shanklin, along the cliff. Field between Cliff and Hyde farms, abundantly.

W. Med.—About Colwell, Freshwater, and most other parts, *Mr. W. D. Snooke* !!!

Root whitish, tapering, woody and very rigid, with mostly a few slightly branched fibres. *Stems* numerous, or more rarely subsolitary, from the crown of the root, from a span to 1, 2, or even 3 feet in length, spreading in all directions, ascending or decumbent, more rarely erect, rounded, leafy, smooth and rigid, hollow in the centre, more or less alternately and unequally branched towards their extremities, the branches lax, spreading or divaricate. *Leaves* very numerous, grayish green, alternate, quite sessile, erect or patent, all linear or linear-lanceolate, very acute, their margins cartilaginous and serrulate, 3-ribbed, the 2 lateral ribs obscure and evanescent near the apex. *Flowers* very fugacious, successively expanding at the summits of the branches, drooping in bud, of a dilute purplish blue or lilac streaked with darker lines or veins, smaller and paler than in the cultivated Flax, sometimes almost white. *Peduncles* solitary, terminal and almost opposite the leaves, single-flowered, distant, patent or nearly erect and much lengthened after blossoming. *Sepals* ovato-elliptical, abruptly acuminate, 3-nerved, with thin white borders and a cartilaginous scabrous dorsal keel, the 2 interior and 1 exterior broader and longer than the 2 remaining outer ones, and for the most part slightly ciliated on their upper scarious margin. *Petals* $\frac{1}{2}$ of an inch in length and about twice as long as the calyx, cuneate obovate, entire or slightly emarginate and crenulate, with short, abrupt, obtuse and pellucid claws. *Stamens* 5, about the length of the calyx, with a trace of as many rudimentary ones in the form of a tubercular prominence on the connecting expansion of the 5 perfect filaments and alternate with them, but placed a little above the gibbous bases of these last; *anthers* erect, pale blue, extrorse, with coarse globular pollen. *Styles* 5, a little longer than the stamens, bluish; *stigmas* white, linear-oblong, glandulose. *Capsules* pale brown, subovato-globose, mucronato-acuminate, glabrous or very slightly pubescent, a little longer than the calyx, the dissepiments fringed along their inner margin. *Seeds* yellowish brown, ovate, thin, flat and highly varnished, covered with a mucilaginous pellicle, from which they are disengaged when ripe; some in each capsule mostly abortive.

The more numerous, mostly ascending, diffuse and variously branched stems, the still narrower leaves, the lowermost of which preserve their linear form, the much smaller and paler flowers, smaller more acuminate capsules, and the lax, straggling, wiry habit of the whole plant, will suffice at a glance to distinguish the present species from its valuable congener. The very blunt calyx-segments, and larger bright blue flowers, mark *L. perenne*, which may possibly be found in this island, from both the foregoing.

** *Leaves opposite. Flowers white.*

3. *L. catharticum*, L. *Purging Flax*. *Mill-mountain*. "Leaves mostly opposite oblong, stem dichotomous above, petals somewhat pointed."—*Br. Fl.* p. 74. *E. B.* t. 381.

In dry hilly pastures, on heaths, downs and chalky banks; very common. *Fl.* June—October. *Fr.* September—November. ☉.

Herb perfectly glabrous and somewhat rigid. *Root* annual, whitish, slender and tapering, more or less branched or nearly simple, flexuose. *Stem* 1 or more, from 2 or 3 inches to a span high, slender and wiry, terete, mostly purplish below,

leafy, when solitary erect, if more numerous the lateral ones are ascending or even procumbent at base, branching at top into a dichotomously but unequally forked panicle, the branches lax and drooping in the bud, finally straight, rigid and divaricate: in very small plants the stem is sometimes nearly simple, the panicle being reduced to a single bifurcation at the top of the former. *Leaves* numerous, sessile, erect or at bottom of the stem patent or spreading, the middle ones largest, from about 4 to 5 lines in length, opposite or towards the top of the stem and branches sometimes alternate, pale green and slightly glaucous, 3-ribbed at base, entire, their cartilaginous edges minutely spinulose, the lower and middle stem-leaves varying as they ascend from obovate to obovate-elliptical and obtuse or slightly pointed, the rest oblong-elliptical or elliptic-lanceolate, acute, the midrib prominent underneath. *Flowers* very small, open only in fine weather and during the day, solitary and terminal on the forks of the panicle, drooping before expansion, afterwards erect. *Bracts* none. *Sepals* ovato-lanceolate, very acute, erect, gibbous at the back, with a very prominent cartilaginous keeled midrib and a pair of faint lateral ones branching and evanescent below the apex; margins diaphanous, spinulose and edged with a few stalked pellucid glands. *Petals* about twice the length of the calyx, obovate, white, with yellow claws, just above which they are slightly cohering together, entire, with for the most part a central rounded lobe or apiculus, but scarcely to be called pointed, 3—5 veined, wavy or rumpled. *Stamens* erect, their *filaments* dilating and combined at base; *anthers* large; *pollen* yellow, globose. *Ovary* ovate, furrowed. *Styles* the length of the stamens, erect; *stigmas* capitate, greenish. *Capsule* scarcely larger than hemp-seed, about as long as the calyx, globose, slightly acuminate, obtusely 5-lobed and furrowed.

II. RADIOLA, Dillen. Flax-seed.

Sepals 4, united up to their middle and mostly 3-cleft. *Petals*, *stamens* and *styles* 4.

1. R. Millegrana, Sm. *Thyme-leaved Flax-seed. All-seed. Least Rupture-wort.* Br. Fl. p. 74. E. B. t. 893. *Linum Radiola*, L.

In moist places on sandy or gravelly heaths and commons, particularly in spots from which the turf has been pared, or in wheel-ruts, as also near the shallow margins of pools in such situations; perhaps not unfrequent, but from its diminutive size and herbaceous flowers as apt to be overlooked as *Centunculus*, with which it is very frequently found growing. Fl. July, August. ☉.

E. Med.—Moist spots at the foot of Bleak down, especially at the junction of the roads to Chale, Niton and Godshill, with *Centunculus minimus*, and near Lashmore pond. Between Newport and Godshill, near Bohemia, Mr. Snooke, Fl. Vect.: I find the plant at the former station in some plenty but of small growth. On Blackpan Common, between Burnt house and Lake, Dr. Bell-Salter!

W. Med.—Heath at Colwell, in spots from which the turf has been removed, Mr. W. D. Snooke!!!

A humble annual, 1 or 2 inches high, rarely more, so much branched as to resemble a bush or tree in miniature, smooth, glabrous and succulent in every part, often of a reddish colour, especially when in seed. *Root* very slender, branched and fibrous. *Stem* erect, in the larger specimens copiously branched almost from the very base, the branches opposite or alternate, repeatedly and dichotomously forked, slender and filiform. *Leaves* opposite, chiefly subtending the forks of the branches, quite sessile, ovate, scarcely pointed (the uppermost excepted), flat or somewhat thick or fleshy and succulent, when they appear ribless, though on desiccation showing several (3 or 5?) very strong nerves, entire and said to be dotted when viewed under a high magnifier. *Flowers* globose,

extremely minute, hardly the size of an ordinary pin's head, axillary and terminal, solitary, on erect peduncles that apparently elongate after flowering. *Bracts* none. *Calyx* globose, 4-cleft, segments united to the middle, their summits acutely tridentate. *Petals* alternate with and about as long as the calyx-segments, ovate or ovate-oblong, somewhat pointed, pellucid. *Capsules* enclosed in the calyx, depresso-globose, 8-lobed.

Order XV. MALVACEÆ, *Juss.*

"*Calyx* 5-cleft, valvate in æstivation. *Corolla* of 5 petals, regular, twisted in æstivation. *Stamens* indefinite, monadelphous, often united with the petals at their bases. *Anthers* reniform, 1-celled. *Ovary* 1. *Styles* single or several combined. *Stigmas* several. *Fruit* a capsule, with many cells and valves; or composed of many carpels, which are dehiscent or indehiscent, collected into a compact body, or placed in a whorl round the base of the style. *Albumen* none, or fleshy, but not abundant. *Embryo* curved, with twisted and doubled *cotyledons*.—Herbs or shrubs, or trees. Leaves alternate, with stipules. Flowers axillary."—*Br. Fl.*

I. MALVA, *Linn.* Mallow.

Calyx with a 3-leaved involucre. *Carpels* numerous, circularly arranged, 1-seeded.

1. *M. sylvestris*, L. *Common Mallow*. "Stem erect herbaceous, leaves with 5—7 rather acute deep lobes, peduncles and petioles hairy, fruit glabrous reticulately wrinkled."—*Br. Fl.* p. 75. *E. B.* t. 671.

β. Stems prostrate.

γ. *micrantha*.

δ. Flowers pale blue.

ε. Flowers pure white.

Common almost everywhere in waste ground, by roadsides, borders of fields and woods, on hedge- and ditch-banks, amongst rubbish, &c. *Fl.* June—September. 24. or according to some ♂.

β. Sandy shore between Ryde and Sea View.

γ. On a piece of waste ground at Ryde.

δ. Upon chalky slopes on the southern face of Bembridge down, near the Culver cliffs, sparingly, *W. Borrer, Esq.*

ε. On the shore at Norton, near Yarmouth.

The var. γ. is a most singular one, differing from the ordinary form only in the flowers, which are scarcely $\frac{1}{2}$ the size of those of the ordinary plant, of a deeper more uniform purple with fainter streaks, the petals narrower in proportion, more acutely notched, and scarcely equal to the column of fructification which protrudes in the yet not half-expanded flower-bud. Dr. Bell-Salter very justly remarked that this var. stands in the same relation to *M. sylvestris* as *M. pusilla* does to *M. rotundifolia*.

2. *M. rotundifolia*, L. *Round-leaved or Dwarf Mallow*. "Stem decumbent, leaves roundish cordate slightly and bluntly 5-lobed, fruit-stalks bent down, petals 2—3 times longer than the calyx,

fruit pubescent, carpels smooth rounded on the edge." — *Br. Fl.* p. 76. *E. B. t.* 1092.

In dry waste or rubbishy places, under walls, by roadsides and on hedgebanks, mostly in or about towns and villages; frequent. *Fl.* June—October. 21.

Common in farm-yards.

E. Med.—Amongst the ruins of Quarr Abbey. Apse heath. At Lake, by Sandown. By Hasely farm. By the gate of Shanklin farm, and abundant in a walled space in the field facing the Well House at Niton. At Froghill farm, and at French Mill, by the roadside. Abundant in Thorley farm yard. [By the ferryhouse, St. Helen's, *Dr. Bell-Salter*, Edrs.]

W. Med.—About Freshwater village.

3. *M. moschata*, L. *Musk Mallow*. Stem erect, radical leaves reniform in 5—7 broad cut lobes, cauline leaves 5-partite pinnato-multifid the segments linear, calyx hairy, leaflets of the outer one linear, capsules hispid. *Br. Fl.* p. 76. *E. B. t.* 754.

Var. β . Flowers white.

Not rare, but rather local, in woods, copses, along hedges, roadsides and borders of fields. *Fl.* June—October. 21.

E. Med.—Woods between Ryde and the Priory, occasionally, and in that on the S. side of the Newport road facing Quarr Abbey. Between Shanklin and Hide farm. In a wood under Arreton down, on the S. side, and in hedge-bottoms of fields adjoining on the chalk, in considerable plenty. Moors about the Wilderness sparingly. Field-hedge near Play-Street farm. Fields about Preston farm, and in hedgerows along the road between Tromblefield and Westridge. Knighton west copse. Edge of a wood near Yaverland farm.

W. Med.—Very fine and abundant in woods on the Thorley side of the Yarmouth river. Frequent in the woods at Swainston. Plentiful in a copse (Stoppers) between Yarmouth and Thorley. Common in Slucombe coppice, a little W. of Roughborough farm. Plentiful near Shorwell, with the upper leaves often less divided than usual, and the middle stem-leaves like those at the root. Lime-kiln cliff, W. Cowes, *Miss G. Kilderbee*. Between Carisbrook and Swainston, *B. T. W.*

β . Road by Newtown (Parkhurst?) Forest, *Rev. G. E. Smith*, who observes that this variety is cultivated in cottage-gardens, and emits a powerful odour of musk. A specimen near Newport Mill. On the Dover, Ryde, occasionally, probably an escape from gardens. At Sandown.

Root large and tapering, tough and woody in the centre, fleshy externally, with a brown wrinkled bark, branching at the crown. Stems numerous, erect or ascending, 2 or 3 feet in height, somewhat woody at the base, terete, pale green, often with a glaucous bloom, filled with a white pith, leafy and clothed with copious spreading and deflexed, simple, rigid hairs, on tubercular bases, unmixed with finer pubescence. Leaves alternate, the radical ones soon withering away; stem-leaves roundish, cleft to the very base into mostly 5 divisions, the lobes cut and pinnatifid, their segments linear, pointed, incised, channelled and undulated, more narrowly and deeply divided as they ascend, more or less pubescent, as are their grooved petioles, with small hairs like those on the stem, but scarcely tubercular at the base. Stipules linear-lanceolate, erect, entire or slightly notched, fringed. Flowers aggregate, terminal on the stem and short branches, occasionally solitary, handsome, rose-coloured or sometimes white, considerably larger than those of the common Mallow, often 2 inches in diameter. Calyx clothed with softer hairs than those on the stem, the exterior one of 3 lanceolate or linear-lanceolate distinct segments, of which one is commonly inserted below the others at some distance, evidently proving their relation to bracts, of which they occupy the place: sometimes it is a fourth segment which is thus remote, which then appears as a true bract, though by its situation it is evidently a part of the exterior calycine whorl, and like the other leaflets is edged with white at the base; interior or true

calyx much longer than the outer, cleft about half way into 5 (or 6) ovato-triangular, acute, 3—5 nerved segments, bordered (and partially sprinkled at the back) with setigerous glands; entire or slightly cleft or dentate. *Petals* mostly 3 times the length of the calyx, striato-venose, shining, obcordato-cuneate, truncate, with a broad, shallow, minutely notched emargination, their claws villous. *Stamens* rose-coloured; *pollen* white, globose. *Capsules* small, blackish, orbicular-reniform, much compressed, densely hispid. *Seeds* gray, roundish kidney-shaped, much flattened at the sides, quite glabrous.

This species derives its trivial name from the agreeable musky odour it exhales, which is perceptible chiefly on opening a box in which the plant has been kept, or in dry warm weather, or when made to flower in a room; at other times it is inodorous or nearly so.* The stamens exhibit the same irritability I have noticed in those of *Althæa officinalis*.

II. ALTHÆA, Linn. Marsh Mallow.

Calyx with a 6—9 leaved involucre. *Carpels* numerous, circularly arranged, 1-seeded.

1. *A. officinalis*, L. *Common Marsh Mallow*. "Leaves soft and downy on both sides cordate or ovate toothed entire or 3-lobed, peduncles axillary many-flowered much shorter than the leaves."—*Br. Fl.* p. 77. *E. B.* t. 147.

In salt-marsh pastures and on the banks of brackish ditches, rivers and pools; not uncommonly. *Fl.* July—September. 2f.

E. Med.—On the Dover, Ryde; and near Springfield. Along the Medina, between Cowes and Newport, in many places abundantly. Near Cowes, *Mr. Marryat* (in *Baxt. Gen. of Fl. Pl.*) [Tolerably abundant on the South shore of Brading harbour, also on St. Helen's spit, *A. G. More, Esq.*, Edrs.]

W. Med.—Newtown salt-marshes, and about Yarmouth and Freshwater, frequent. Abundant in the first marsh-meadow at Garnet Bay, immediately adjoining the bridge over the stream. Coast near W. Cowes. Abundant about Norton, *Mr. Snooke* !!!

Root very large and fleshy. *Stems* erect, 2—4 feet in height, simple or a little branched, round, downy like the rest of the plant. *Leaves* stalked, plaited, grayish green, very soft with close hoary pubescence, obscurely 5-lobed, the lobes cut and serrated, the middle one alone strongly marked, triangular and pointed, upper lobes wedge-shaped at the base; some of the lowermost leaves are often roundish or broadly triangular. *Peduncles* solitary or several, axillary, 1-, 2-, or many-flowered, shorter than the leaves. *Flowers* as large as in *Malva sylvestris*, varying from pale rose-colour to nearly white. *Sepals* in 2 rows, the outer and shorter of 8—10 unequal, linear-lanceolate, the inner of 5 ovate, pretty uniform, acute segments. *Petals* much longer than the calyx, inversely heart-shaped, crenate, their claws fringed and joined with the base of the united stamens. *Stamens* rose-coloured; *anthers* violet; *pollen* made up of dark cohering globules, which as well as the stamens evince great irritability on being pressed or rubbed, detaching themselves from the anther with an elastic and twisting motion, but of scarcely momentary continuance. *Capsules* numerous, in depressed orbicular heads partly infolded by the inner calycine segments, brownish, nearly orbicular, quite flat at the sides, villous on the back with thick yellowish pile. *Seeds* solitary, brown, orbicular-reniform, their sides depressed, perfectly smooth and even.

* It is by no means, as some authors assert, only when beginning to wither that the musky smell becomes perceptible; both the fresh leaves and opening flowers emit it powerfully in a close confined or moist atmosphere, but the odour is too subtle and diffusible to be much perceived in the open air or that of a large apartment.

Lavatera arborea, L., escapes occasionally from cottage-gardens, where it is very common, into waste ground, but I apprehend has no better title to insertion here. A few seedling plants were observed on the Dover, Ryde, in 1836, but this is a place where "many a garden flower grows wild." About Sandown fort and cottage, according to B. T. W. The natural habitat of this plant is upon maritime rocks and islets, where it grows to 3 or 4 feet in height, with a stem of an inch or more in diameter. It is a very frequent ornament of rustic gardens in the Isle of Wight and in various parts of England, rising in favourable situations to a height of 8—10 feet and upwards, with a subligneous biennial or perennial stem, of 3 or 4 inches across, branching towards the top into a hemispherical head, garnished with ample seven-lobed and plaited leaves as soft as velvet, which remain through the winter in mild seasons. After once flowering, which it does the second or at most the third year, the plant decays, and presents an unsightly picture of half-dried naked twigs; thus, the shortness of its duration greatly lessens its value to the horticulturist.

Order XVI. TILIACEÆ, Juss.

"Sepals 4—5, deciduous, with valvular æstivation. Petals 4—5, often with a depression at the base, sometimes wanting. Stamens distinct or polyadelphous at the base, generally indefinite. Anthers 2-celled, opening longitudinally, introrse. Glands 4—5, adnate with the petals to the stalk of the ovary. Ovary 1—10 celled. Style 1. Capsule with 1 or many seeds in each cell. Albumen fleshy, including an erect embryo."—Br. Fl.

I. TILIA, Linn. Lime.*

"Calyx 5-partite. Petals 5, with or without a nectary at the base. Ovary 5-celled; cells with 2 ovules. Fruit 1-celled, 1—2 seeded."—Br. Fl.

Of this beautiful genus, more remarkable for the stately growth than the value of its timber, and for the delicate fragrance of its blossoms and ample foliage, Britain possesses but one unquestionably indigenous species (*T. parvifolia*). The broad-leaved limes, so common in plantations and avenues, appear to have been introduced from mountainous woods on the continent, and though partly naturalized in hedgerows, to be nowhere indigenous in this country.

† ? 1. *T. parvifolia*, Ehrh. *Small-leaved Lime*. "Nectaries none, leaves smooth above glaucous beneath with scattered as well as hairy axillary blotches, branches and petioles glabrous, fruit oblique with filiform ribs chartaceous brittle at length nearly glabrous."—Br. Fl. p. 77. E. B. t. 1705. *T. microphylla*, Vent.

* Our English Lime, Linden, Lyme, or Lind, are from the Saxon Lind, German Linde, a lime-tree, which is probably so named from the extreme softness and lightness of the wood, *linde* being an obsolete or poetic word for *gelind*, soft or yielding. The quotations from Dryden in Johnson's Dictionary, art. "Linden," are much in favour of this derivation.

"Hard box and linden of a softer grain."

"Two neighbouring trees, with walls encompass'd round,
One a hard oak, a softer linden one."

In woods and hedges; very rare. *Fl.* July, August. *h.*

In considerable plenty in a patch of thicket between Wilmingham and Tapnel farms, appearing to be perfectly wild there, but from having been cut as copse-wood not permitted to attain a flowering size. The copse I am told is called Stark Net or E. Afton withy-bed, and the cottage nearly opposite it Tapnel cottage.

T. Europea, L., is found here and there in hedges, but scarcely in any place where it can be deemed wild. There are two or three small trees (kept lopped) in a small thicket near Perreton apparently of this species or variety.

Order XVII. HYPERICACEÆ, *Juss.*

"*Sepals* 4—5, distinct or cohering, persistent, frequently with glandular dots. *Petals* 4—5, with a twisted aestivation and often black dots. *Stamens* numerous (15 or more), polyadelphous, rarely monadelphous or quite distinct. *Anthers* small, versatile. *Ovary* single. *Styles* 3—5, rarely combined. *Stigmas* simple. *Fruit* a capsule of several valves, rarely baccate, several-celled (or imperfectly so by the valves being curved inwards, and scarcely meeting in the axis), or 1-celled: dehiscence septicidal. *Seeds* minute, numerous, on a receptacle in the axis, or on the incurved margins of the valves. *Embryo* straight. *Albumen* 0.—Herbs or shrubs, with generally opposite leaves, mostly marked with pellucid dots and commonly yellow flowers."—*Br. Fl.*

I. ANDROSÆMUM, *Allioni*. Tutsan.

"*Calyx* 5-partite, the lobes unequal. *Petals* 5. *Stamens* numerous, united at the base. *Styles* 3."—*Macreight's Man. of Brit. Bot.*

1. *A. officinale*, All. *Common Tutsan*. *Park-leaves*. Stem shrubby or (partly) suffruticose subcompressed and ancipital, leaves cordato-ovate obtuse, cymes trichotomous few-flowered, sepals unequal ovate about as long as the obtuse petals, germen globose, styles 3 shorter than the stamens, capsules subglobose. *Hypericum Androsæmum*, L. *Br. Fl.* p. 79. *E. B. t.* 1225.

In woods, thickets, copses, moist shady groves, hedges and bushy places; very frequent, though seldom in any quantity together. *Fl.* June—August. *Fr.* September, October. *h.*

E. Med.—Extremely common in woods by the shore on the West side of Wootton river at its mouth, between that and King's Quay, also in woods about the Priory near Ryde, very frequent. In the patches of copse-wood to the West of and below Aldermoor farm, sparingly. In a field-hedge by Stroud wood, in comparative plenty. Frequent in thickets about Appuldurcombe, and in the high wood in the Park. Plantations nearly at the back of the Griffin inn, Godshill. In a sandy hollow way near Upper and Lower Rill farms, on a spot where three roads meet. Quarr copse. Apse Castle, near Shanklin.

W. Med.—Thorness wood. Kingstou copse. Frequent in Burnt wood.

A very glabrous and somewhat shrubby plant. *Root* woody, of several very long, stout, branched fibres, with a brownish cuticle. *Stems* several, suffrutescent, or rather perhaps they may be called shrubby, seldom above $2\frac{1}{2}$ feet high, rounded, with a narrow slightly elevated wing on opposite sides and alternating in position with the leaves, not much branched, the branches opposite or alternate, covered when old like the stem itself with a chestnut-coloured bark, which partly detaches itself in shreds or strips.* *Leaves* deciduous, opposite, sessile, quite entire, very large, but the lowermost usually smaller than those higher up, ovate or ovato-oblong, obtuse or very slightly pointed, with a minute blunt apiculus, sometimes a little emarginate, rounded or more or less cordate at the base, somewhat glaucous, reticulated beneath with numerous transparent scarcely prominent veins, the margins sprinkled with pellucid dots more or less apparent on the disk of the leaf, but always far less conspicuously than in the true species of *Hypericum*, nor are the black marginal glands so usual in them found at all in this. *Flowers* in terminal, cymose, nearly simple panicles, that are much shorter than the leaves; occasionally 1, 2, or 3 on opposite or solitary peduncles in the axils of the leaves immediately below the highest pair, few, small for the size of the plant, about $\frac{1}{2}$ of an inch in diameter. *Bracts* small, opposite, ovato-lanceolate, appressed or erect. *Sepals* 5, unequal, quite entire, without glands, pellucidly veined and punctate, mostly purplish at the base, the 3 exterior ones roundish ovate, usually very obtuse; the 2 interior smaller, narrower and somewhat pointed; all finally enlarged and more or less reflexed in seed. *Petals* palish yellow, about as long as the sepals, obovate-oblong, concave, quite entire, without dots or glands. *Stamens* numerous, in 5 sets that are opposite the petals, but sometimes confluent or indistinctly parcelled, about as long as the petals; *anthers* without interlobular glands; *pollen* whitish. *Styles* 3, short, cylindrical, erect, slightly spreading at summit; *stigmas* glanduloso-pilose, purplish. *Germen* (ovary) nearly globose, glabrous and shining, neither wrinkled nor furrowed. *Capsules* berry-like, about $\frac{1}{2}$ an inch long, ovato-rotundate, black, often with a slight bloom, smooth and shining, tipped with the styles or their bases, and marked with 3 or 6 obscure furrows, pulpy when green but becoming dry and dehiscent when ripe, semitrilocular, the inflexed and doubled margins of the valves projecting a little within the cavity, and carrying each a transverse ovate and fleshy placenta, bearing seed on both sides of its reflexed wings, and unconnected with the walls of the capsule both at top and bottom. *Seeds* very numerous, minute, brown, oblongo-cylindrical, finely and longitudinally reticulate, striate and wrinkled.

The bruised capsules emit a pleasant scent of lemon and turpentine mixed.

This plant is far more commonly distributed over the country than was formerly imagined. Though never found in profusion, it is met with in almost every part of Britain, even in the N. of Scotland, but is more frequent in the South and especially the West of England. It is of common occurrence from Sussex to Cornwall, increasing in frequency as we advance westward and the winters become milder. On the continent, from its impatience of cold, the species is restricted to the warmer parts of France, Spain, Italy, &c.

* I have every reason to believe that the flowering stems do not usually survive to flower again, since the plant, though generally accounted shrubby, seems to disappear suddenly in spots where it may have been observed in that state to be pretty frequent the previous season. Such was the case in Appuldurcombe Park, in a particular part of which I found it in some plenty in 1844, though in the following year there was but comparatively little remaining. I have since ascertained that the lower part of the stem and even of the branches lives through at least two, and probably many more winters, and that the plant raised from seed in a garden (St. John's) is perfectly fruticose below and endures for some years, but the smaller branches and extremities of the larger ones seem to be annual, or at least perish in severe winters.

The *Hypericum elatum* of gardens bears a very strong resemblance to *Androsæmum officinale*, and is often confounded with that species under its English name of Tutsan. *H. elatum* is however a much taller plant, often 6 or 7 feet high, of a more enduring nature, with larger flowers, having the petals longer than the calyx-segments, the germen conical, and the styles of much greater length than in our wild plant, and equalling the very long stamens. The native country of *H. elatum* is not ascertained with absolute certainty; though stated to be a native of N. America, it appears to be unknown to the botanists of that country.

II. HYPERICUM, Linn. St. John's-wort.

"*Calyx* 5-partite, or of 5 sepals, inferior. *Petals* 5. *Filaments* united at the base into 3 or 5 sets (or sometimes almost distinct)." —*Br. Fl.*

In America the species of this genus are extremely numerous.

* *Styles* 5. *Stem* shrubby.

*1. *H. calycinum*, L. *Large-flowered St. John's-wort. Rose of Sharon.* "Flowers solitary, segments of the calyx unequal obovate obtuse, leaves oblong, stem shrubby branched square." —*Br. Fl.* p. 79. *E. B. t.* 2017.

Naturalized here and there in groves and on shady banks, &c., where it has been originally introduced for ornament. *Fl.* June—August. $\frac{1}{2}$.

Quite naturalized in the wood along the shore between Ryde and Binstead, and amongst bushes on the wet clay-banks that skirt the beach. St. John's, in the wood between the lodge and the house, but evidently introduced. Naturalized (?) abundantly on the bank by the roadside above the hotel at Bembridge.

** *Styles* 3. *Sepals* with few or no glandular serratures. *Stems* herbaceous.

† *Stems* erect.

2. *H. perforatum*, L. *Common or Perforated St. John's-wort.* "Stem 2-edged, leaves oblong obtuse with pellucid dots, sepals erect lanceolate acute." *Br. Fl.* p. 79. *Fl. Dan.* vi. t. 1043. *E. B. v. t.* 295 (var. γ . ut infra).

β . Leaves sublinear, elliptical. *H. perforatum* δ . *angustifolium*, *Gaud. Fl. Helv.* iv. p. 628? *H. veronense*, *Schrank*: *Koch in Röhl. Deutschl. Fl.*

γ . Leaves broadly ovato-oblong or ovato-elliptical. *H. perforatum* β . *latifolium*, *Gaud. Fl. Helv.* iv. p. 627. *Koch in Röhl. Deutschl. Fl.* v. Band. s. 349.

In woods, thickets, hedges, pastures, the borders of fields, waste places, by roadsides and on heaths; universally. *Fl.* June—September. *Fr.* September, October. $\frac{1}{4}$.

ϵ . Common about Godshill and Newchurch. Common in many places about Ryde. About the gravel-pits at the E. end of the Dover, Ryde. Abundant in Tolt copse, near Gatcombe, with leaves remarkably narrow. Common about Shorwell.

ζ . Frequent about Calbourne, Westover, &c. Bottom-ground copse, near Idlecombe. By Newchurch, on the way by the fields to Skinner's hill and Bordwood. Near Kerne. Along the ascent from Shanklin towards Cook's Castle, above Cowpit cliff. Plentiful in Guildford lane, near Haven-Street. Near Ashey farm.

Plant quite glabrous in every part. *Root* somewhat creeping, hard, rigid and woody, more or less branched, reddish brown externally. *Stem* from 1 to 2 $\frac{1}{2}$ or 3 feet high, solitary or several, besides shorter barren shoots of the first year, a little ascending at the base, then erect, firm, almost woody at bottom, hollow in the

centre, with 2 or even 4 opposite, very narrow, membranous ridges or wings on alternate sides between each pair of stem-leaves, usually naked below and simple, greenish or purplish, with a few scattered black dots, much and corymbosely ramified above, the branches opposite, axillary and decussate, the lower ones short and barren, gradually elongating as they ascend and at length becoming floriferous. *Leaves* numerous, opposite, sessile, decussate, dark (sometimes bright), elliptical, oblong-elliptical or obovate-elliptical, in β . very narrow and sublinear, those of the main stem about 1 or $1\frac{1}{2}$ inch long, and above $\frac{1}{2}$ an inch wide, of the branches smaller, prominently 7-ribbed beneath, the midrib very acute, and all pellucid when viewed against the light, usually very obtuse and rounded, sometimes a little pointed, quite entire, with a row of little black dots or glands along their slightly deflexed margins, and a few occasionally sprinkled over the under surface, in addition to the more or less numerous pellucid points, which are occasionally nearly wanting as in *H. dubium*, a species not yet detected in the Isle of Wight, but which, though much resembling the present, besides having the calyx-segments obtuse, has the leaves covered with a network of anastomosing pellucid veins, by which it may at once be distinguished from every variety of our common plant.* *Flowers* very numerous, showy, of a bright golden almost orange-yellow, in repeatedly forked clusters terminating the superior branches, constituting together a large paniculate corymb. *Pedicels* unequal, mostly with a lanceolate, leafy, toothed bract at the base of each. *Calyx* divided nearly throughout into 5 lanceolate, somewhat unequal, acute or rarely rather obtuse segments, which are 3-ribbed, pellucidly striate, remotely serrato-dentate at top, mucronato-acuminate, sprinkled here and there with a few black dots. *Petals* above twice the length of the calyx, irregularly and obliquely oblong, sulcato-striate, bluntly crenulate towards the apex on one side chiefly, with a black dot in the sinus of each notch, and a few more marginal ones at the back and scattered at random over the surface, occasionally, too, streaked with purplish black. *Stamens* numerous, in 3 usually distinct sets, which are alternate with the styles, shorter than the petals; *anthers* of 2 round lobes, with a purplish black dot between them. *Styles* 3, straight, divergent, with simple crimson stigmas. *Germen* ovoid, somewhat furrowed or rugose. *Capsules* about $\frac{1}{2}$ of an inch long, ovoid-conical, reddish and membranous, 3-cleft or tricarpeal at the summit, 3-celled, furrowed and wrinkled when fresh with translucent warts and ridges. *Seeds* numerous, deep chocolate-brown, oblong-cylindrical, obtuse at both ends, reticulato-punctate, in close parallel rows, the areola shallow and angular.

The var. β . is, as Gaudin observes, remarkable for the more erect branches and much narrower leaves, the pellucid dots on which are fewer but considerably larger than in the common form. His other characters I do not observe in my specimens, or they are at least liable to considerable variation, as indeed is the breadth of the leaves, which approach those of the ordinary state of the species by sensible gradations in different examples, and even on the same stem.

The var. γ . approaches *H. quadrangulum*, L. (*H. dubium* of Leers and British authors), and *H. delphinense* of Villars, in having the sepals comparatively broad and obtuse, and I was at first inclined to suppose it might be that species, which from the descriptions of authors seems to be a very variable if not a doubtful one, as its name implies. But on comparing our variety with specimens of the true *quadrangulum*, kindly communicated to me by Mr. Leighton from Shropshire, I am convinced his plant and mine are not the same, the latter having neither the 4-angled stem, the imperforate mucronate leaves, nor the black streaks on the petals; even the breadth of the sepals is less considerable in ours than in the Shropshire specimens, the upper leaves in which are however sparingly pellucido-punctate, a character said to obtain in the true *H. quadrangulum* sometimes in as great a

* Such is the case in all the specimens I have received from various parts of Britain, and others gathered by myself at Killarney. I do not find any notice taken of this character by any author I have consulted.

degree as in *H. perforatum*; * nor are the black dots and streaks on the petals of *H. quadrangulum* less inconstant, being, it is stated, sometimes wholly wanting or nearly so. Koch† says that in *H. quadrangulum* the sepals are oblongo-ovate, faintly toothed at the tips (in my plant they are elliptic-lanceolate, toothed and mucronate, as in that from Shropshire), the 3 exterior obtuse, the 2 inner somewhat pointed (spitzlich), usually as long as the germen (Fruchtknoten) in the full-blown flowers or somewhat larger, and either sprinkled or not with few or many black dots. In E. B. the sepals are drawn very blunt, with broad white margins, of which I find no mention made by Smith or any other author, and therefore conclude it to be an inaccuracy of the draughtsman. Beside the breadth and bluntness of the calyx-segments, which are very variable in degree, there remains no certain diagnostic of *H. quadrangulum* but the obscurely 4-angled stem, which is evidently seen in Mr. Leighton's specimens, where the alternate and faintly projecting pair of wings‡ may be traced, though their presence scarcely affect the rotundity of the stem, which on a transverse section appears nearly as cylindrical as *H. perforatum* and our present variety, where the secondary ridges are quite wanting. A certain mark of distinction however between *H. perforatum* and *H. dubium* is to be found in the pellucid reticulations on the under side of the leaves of the latter when held against the light, and which are far less numerous and conspicuous in the former, or nearly obsolete.

This species is extremely common in Canada and throughout the U. States, where it is generally supposed to have been introduced from Europe. I have never in America fallen in with our broad-leaved form γ., which so much resembles *H. dubium*; nor do the botanists of that country appear to be acquainted with any other than the narrower more elliptical-leaved variety represented in Fl. Danica and in Fl. Loudin., which, being that of most frequent occurrence in Europe also, may be assumed as the typical state of the species. Our broad-leaved form is said by Koch (Röhl. Deutschl. Fl.) to be found only in southern Switzerland and Upper Italy, and to be absent altogether from Germany. Dr. Darlington (Florula Cest. p. 58) gives this vulnerary herb a very bad character in America for producing troublesome sores on horses and horned cattle, especially those which are white or have white feet and noses, by mere contact with it. As such results are not observable in this country, the charge is most likely unjustly brought against it for effects produced by very different causes. This remark upon the "balm of the warrior's wound" reminds one of what used formerly to be said of the Dutch, that they were good subjects at home, but very bad masters abroad.

3. *H. quadrangulum*, L. *Square-stalked St. John's-wort. St. Peter's-wort.* "Stem herbaceous 4-angled somewhat branched, leaves ovate with pellucid dots, sepals erect lanceolate acuminate." —Br. Fl. p. 80. E. B. t. 370. Bab. in Trans. of Bot. Soc. Edinb. vol. i. p. 83.

In low wet meadows and thickets, moist woods, and along the sides of ditches, rivers, &c.; very common. Fl. July—September. Fr. October. 24.

E. Med.—In various places about Ryde.

W. Med.—Woods by Yarmouth and Thorley.

Herb perfectly glabrous, with a somewhat fetid odour, like that of *H. hircinum*, when bruised, though Smith calls it a pleasant lemon scent. Root somewhat creeping, of one or more stout, fusiform, woody, and many slender, flexuose

* Röhring's 'Deutschlands Flora' fortgesetzt von W. D. J. Koch, Ver. Band. s. 351.

† L. s. c.

‡ The ridges or wings do not spring from the woody fibre, but are merely formed by a duplication of the epidermis continued into the midrib of the leaf.

branched fibres. *Stems* several, from about 1 to 3½ feet high, erect or slightly ascending at their hard woody base, which is covered with a deep reddish brown bark, tereti-quadrangular or nearly round in its firm, white, ligneous, perforated interior, but appearing acutely 4-cornered by a reduplication of the reddish epidermis into as many very prominent, thin, undulated wings or angles; simple and leafless or nearly so below, copiously branched in its upper part, the branches opposite, axillary, erecto-patent, simple, short, especially the lower ones, those near the top of the stem only floriferous, very leafy. *Leaves* pale green, scarcely more so beneath, opposite,* sessile, ovate or ovate-elliptical, quite entire, membranaceous, semiamplexicaul and almost joining at their deflexed bases, the largest on the stem about 1—1½ inch in length, and about 9 or 10 lines wide, obtuse and submucronate, depresso-venose above, copiously and minutely pellucid-punctate, with slender, branched, anastomosing veins forming a sort of pellucid network between the principal nerves or ribs,† which are very prominent beneath, the middle one decurrent into one of the four wings of the stem, the alternate pair of angles proceeding in like manner from the pair of leaves next above, and connected with the pair next below by a short, curved, transverse ridge, after which the same angles are continued down into the axils of the second pair of leaves, below those from which they took their origin: on the somewhat reflexed margins of the leaves underneath is a row of minute black dots or glands not extending over the disk. *Flowers* very numerous, smaller than in any other British species except *H. humifusum*, in terminal, close, subcymose, repeatedly and trichotomously forked clusters on the higher branches and stem, constituting altogether an oblong leafy panicle. *Bracts* subulate-lanceolate, very acutely acuminate. *Sepals* somewhat unequal in breadth, lanceolate or ovato-lanceolate, very acutely acuminate, quite entire, pellucidly (3—5?) ribbed and striate, but neither punctate nor glandulose, erect or a little spreading (not reflexed) in fruit. *Petals* much longer than the calyx, palish yellow, oblong-lanceolate, soon becoming narrow by involution, unequal and somewhat oblique, quite entire, without marginal glands, sometimes a little streaked or spotted with red, veined, but not sulcate-striate. *Stamens* in 3 very distinct sets or triadelphous, unequal, not longer than the petals; *anthers* with a black dot between the lobes; *pollen* yellow, elliptical. *Styles* 3, erect or divaricate, straight, about the length of the stamens; *stigmas* purplish. *Ovary* oblong, sulcate-striate. *Capsules* 3-celled, purplish red, 3 or 4 lines in length, ovoid-conical, scarcely 3-cleft (or tricarpeal) at the summit, undulately rugose and furrowed longitudinally, exceeding the very acute erect sepals. *Seeds* numerous, light grayish brown, terete-oblong, rounded at both ends, minutely and superficially reticulate, scabrous, smaller than in any other British species except *H. humifusum*.

†† *Stems prostrate.*

4. *H. humifusum*, L. *Trailing St. John's-wort*. "Flowers terminal subcymose, stem compressed prostrate, leaves oblong obtuse glabrous."—*Br. Fl.* p. 80. *E. B.* t. 1226.

In gravelly, sandy, chalky or heathy fields and pastures, fallows, and sometimes on stone walls; not unfrequent. *Fl.* June—August. *Fr.* July. 24.

E. Med.—On the Dover and many other places about Ryde. On the stone walls about Appley. Fields near Cowes. On the common by Heath Farm, frequent. Abundant in the barren sandy fields below the western side of Bleak Down, by Lashmere pond, &c.

W. Med.—Northwood park, *Miss G. Kilderbee*. Colwell heath, near W. Cowes, Parkhurst heath, &c., *B. T. W.*

* I have found them in threes.

† This network of anastomosing pellucid veins is much more complete and conspicuous in *H. dubium*.

Plant perfectly glabrous. *Root* brownish, wiry, usually much branched and copiously beset with ramified capillary fibres at the top. *Stems* numerous, slender, prostrate or a little ascending at their extremities, spreading in all directions, from a few inches to a foot or (when depending from a wall or bank) even more in length, somewhat rigid, mostly purplish and scarred below with the remains of the leaves of an earlier season, faintly 2-edged or nearly terete, more or less copiously and irregularly branched, when old becoming somewhat woody and leafless. *Leaves* very numerous, opposite, entire, subsessile, ovato-oblong or elliptical-oblong, very obtuse, slightly retuse at the summit and submucronate, with the minute blunt and thickened extremity of the prominent midrib a little projecting in the sinus, their margins more or less reflexed and even strongly revolute, and having immediately behind them underneath a row of black glandular dots; pellucidly veined and usually thickly punctate, but not reticulated. *Flowers* partly in small, terminal, irregular, subcymose panicles that are more or less leafy, trichotomous, their secondary divisions mostly dichotomous and simple; partly solitary, or on short lateral shoots or branch-like peduncles, small. *Sepals* very unequal in breadth, 3 of them oblong-elliptical, obtuse, the 2 others elliptic-lanceolate, somewhat acute; all entire or subserrate, the serratures with or without black globular glands, pellucidly 3-5 ribbed and striate, the midrib mostly projecting into an obtuse keel, and ending either in a minute apiculus, or a thickened point to the sepal. *Petals* bright yellow, not much longer than the calyx, obovate or obovate-oblong, somewhat oblique, sulcate-striate and often streaked with red at the back, entire and fringed with black. *Stamens* in 3 sets (or triadelphous), of about 5 in each set, partly at least persistent; *anthers* plain (without purple dots). *Styles* 3, persistent, rather short and thick, divaricate; *stigmas* mostly purplish. *Germens* sulcate-striate, but not wrinkled, subtrilobate. *Capsules* longer than the calyx, ovoid-conical, obtusely trigonous, 3-celled, tipped with the styles. *Seeds* very numerous and minute, brownish or iron-gray, shortly cylindrical, rounded at each end and subapiculate, reticulately punctato-striate, smaller than in any other British species.

*** *Styles* 3, *Sepals* with glandular serratures. *Stems* herbaceous.

† *Stems* erect.

5. *H. hirsutum*, L. *Hairy St. John's-wort*. "Sepals lanceolate acute with (black) glandular serratures, stem erect rounded pubescent, leaves ovate or oblong slightly stalked somewhat downy beneath."—*Br. Fl.* p. 80. *E. B. t.* 1156.

In woods, thickets, and along shady hedgerows, especially on chalk or limestone, in various parts of the island. *Fl.* July, August. *Fr.* September. 24.

E. Med.—Plentiful in the high wood in the park at Appuldurcombe. In Quarr Copse. Woods about Ashey, common.

W. Med.—New Barn Hummit, Calbourne; abundant. In all or most of the hill-side copses about Buccombe, Rowborough, Gauson's and Galleberry downs. Plentiful in woods and in the park at Swainston, Yarmouth, Thorley, &c. About Carisbrook and the castle. Between Apes Hill and Swainston, in plenty, *B. T. W.*

Root creeping. *Stem* 1 or more, erect, slightly branched, about 2 feet in height, round, leafy, finely hairy, often stained with purple. *Leaves* opposite, ovate, obtuse, nearly sessile, quite entire, strongly nerved, hairy, deep green above, pale or whitish and downy beneath, sprinkled with resinous dots. Each leaf supports a short barren branch or a pair of small narrow leaflets at its origin. *Panicle* large, tapering, its branches erect. *Flowers* numerous, golden-yellow, rather small, with narrow petals. *Sepals* linear-lanceolate, glabrous, with distant, black, glandular serratures, 3-ribbed, acute. *Petals* entire at the margin, with an occasional gland or two near the top. *Stamens* in 3 sets; *anthers* yellow, eglandulose. *Styles* 3, long and spreading. *Capsule* longer than the calyx, rusty brown, ovato-conical, many-ribbed and glabrous. *Seeds* numerous, pale rusty red, about

as large as those of *H. montanum*, obtuse at both ends, covered with minute papillæ in close-set longitudinal rows.

6. *H. montanum*, L. *Mountain St. John's-wort*. Stem simple erect terete glabrous, leaves sessile distant ovate-oblong with marginal dots a little hairy beneath glabrous above, the upper pellucid punctate, panicle terminal dense subcapitate, sepals lanceolate acute fringed with elliptical glands, petals oblong entire without dots or glands. *Br. Fl.* p. 81. *E. B. t.* 371.

In hilly woods and on dry bushy banks, rare, and seldom in any quantity together. *Fl.* July—September. *Fr.* September. 24.

E. Med.—At East End occasionally, but always in small quantity. Plentiful on the right-hand bank before entering the gate leading into Pelham woods, *Frederick Townsend, Esq.* Pelham woods, but very scarce. In the grounds and elsewhere about Steepphill, *Albert Hambrough, Esq.*

Root strong, of several stout, reddish brown, woody and creeping fibres, and emitting slender leafy suckers at the crown. *Stems* several, from 1 to 2½ feet high, erect, ascending or even decumbent and somewhat woody at base, round, smooth, slender, rigid and slightly flexuose, simple or sometimes very slightly branched, yellowish or purplish, scarred and naked below, quite glabrous, not at all winged or angled. *Leaves* opposite, in pairs, distant, becoming remarkably so towards the summit of the stem, the highest 3, 4, or 5 inches apart, the interval between each pair diminishing towards the root, the lowermost not more than half that distance asunder, sessile, thin, with a more or less erect tendency, those about the centre of the stem the largest, ovate-oblong, ovate-elliptical or oblongo-elliptical, obtuse or a little pointed sometimes with a small apiculus, subcordate and semiamplexicaul at base, glabrous above, minutely pubescent beneath with short, erect, bristly hairs, sometimes glabrous on both sides, about 9- or 10-ribbed, pellucidly reticulate with a line of minute black dots along the under side of their often purplish brown margins; the upper leaves pretty thickly sprinkled with pellucid points, of which the lowest are in part or wholly destitute. *Panicle* terminal, with occasionally a pair or two of smaller lateral ones from the axils of the uppermost leaves, leafless, very short, dense and compact, almost capitate, the lowermost pair of its branches and sometimes the next pair above it usually separated by a short interval from the rest, which are very closely crowded. *Bracts*,—a pair under each fork of the panicle, clasping, lanceolate, dentato-serrate and glandular like the sepals, which they closely resemble. *Flowers* like those of *H. hirsutum*, few only expanding at a time in the same panicle. *Sepals* lanceolate, acute, pellucidly striate, furrowed and shining, appearing beautifully fringed with close, erect, stalk-like serratures, each bearing a purplish black, roundish, obconic gland, depressed at top. *Petals* much longer than the calyx, obliquely oblong, obtuse, pale yellow, pellucidly striate or veined, quite entire, without marginal glands. *Stamens* in 3 somewhat indistinct sets, shorter than the petals; *anthers* yellow, orbicular, with a dark gland at the summit between the lobes; *pollen* yellow. *Styles* 3, straight, spreading; *stigmas* purple. *Germen* 3-lobed, furrowed. *Capsules* broadly ovoid, acutely triquetrous at top, mostly about as long as the sepals, sometimes a little longer or shorter, streaked or puckered with numerous longitudinal folds or ridges, 3-celled. *Seeds* numerous, much smaller than in *H. hirsutum*, and resembling rather those of *H. quadrangulum* in size and sculpture, dark brown verging on iron-gray, oblong-cylindrical, minutely and longitudinally ribbed or striate, and reticulated.

This species has many points in common with *H. hirsutum*, but is known with facility from that and every other species of the genus by its short, terminal, compact, corymbose or subcapitate panicle, its large, distant, more pointed leaves, and nearly simple stem. It is, as Sir James Smith remarks, a most elegant though not ostentatious species, the glutinous dark fringes of its calyx and bracts resembling, as he observes, the glands of a Moss Rose. Being always, however, sparing in quantity even where it does occur, it contributes but little to the

embellishment of our sloping banks, and its beauty is still further diminished by the paucity of blossom exhibited by it at one time, and the unsightly remains of the already faded flowers.

7. *H. pulchrum*, L. *Small Upright St. John's-wort*. "Sepals broadly ovate obtuse with (black) glandular serratures, stem erect glabrous, leaves cordate amplexicaul glabrous."—*Br. Fl.* p. 80. *E. B. t.* 1227.

In dry woods and thickets, and on open sandy fields and heaths, plentifully. *Fl.* July, August. *Fr.* September, October. 4.

Root brownish, slender, woody, flexuose, much-branched and fibrous, occasionally a little creeping in loose sandy soils, and frequently emitting short trailing and barren shoots in a caespitose manner at the crown. *Stems* several, often extremely numerous, ascending or shortly decumbent at bottom, where they are commonly of a fine blood-red, afterwards erect, from a foot or less to 24 or 30 inches in height, terete, slender, rigid, smooth and glabrous like the rest of the plant, filled with a loose pith, scarred and leafless at base, emitting from the axils of each pair of leaves two opposite, short, erect and somewhat ascending, almost filiform branches, which towards the summit of the stem are floriferous and nearly naked, those lower down leafy and barren or occasionally bearing a flower or two. *Leaves* opposite, in pairs, very small, quite entire, very obtuse, closely sessile, deep green and slightly glaucous above, occasionally turning to a bright red, much paler underneath, a little thick and fleshy, pellucido-punctate, but without marginal glands, their edges a little deflexed; those of the main stem distant (3 inches or more), broadly ovato-cordate, mostly with a slight sweep or curve inwards in marginal contour, semiamplexicaul and overlapping by their lobes, somewhat deflexed and vaulted or concave beneath, from 6 to 9 lines in length by 5 to 6 or 8 in breadth, those of the branches more numerous, smaller and narrower, oblong-elliptical, cordate or rounded. *Bracts* in pairs a little below each flower, and at the forks of the panicle, small, ovate or oblong, pellucidly dotted. *Flowers* about 8—10 lines in diameter, in small, rather irregular, but mostly trichotomously forked panicles terminating the stem and higher branches, forming together one narrow, oblong, very loose, slightly leafy panicle. *Calyx* subcampanulate, pellucidly veined, streaked and dotted, cleft about $\frac{3}{4}$ of its length into 5 rather unequal, broad, ovate, flat segments, which are very obtuse and rounded or slightly pointed, serrated, the serratures tipped with a black sessile gland. *Petals* about twice the length of the calyx, obovato-oblong, somewhat oblique, bright gamboge-yellow, striate, streaked and tipped with clear brownish red, particularly in the bud, their margins entire, but fringed with sessile glands like those on the calyx. *Stamens* pretty numerous, in 3 sets or triadelphous, about as long as the petals, persistent; *filaments* bright yellow; *anthers* orange-scarlet, of 2 almost spherical lobes, destitute of glands at the back. *Styles* 3, straight, divaricate, as long as the stamens, reflexed in fruit; *stigmas* simple, glandulose, dark purple. *Germen* ovoid, whitish, finely striated, smooth, 3-lobed by a furrow between the styles. *Capsules* reddish brown, 3-celled, ovoid-conical, 3-cleft at the summit (or tricarpeal), about 3 times the length of the sepals, smooth, striated and membranous. *Seeds* numerous, light yellowish or ashy brown, oblong-cylindrical, a little curved, rounded at each extremity, furfuraceo-scarious, not punctate nor striated.

In dry, open or sandy pastures the stems are wholly or partly red all over, the plant shorter, more irregularly branched, flexuose and straggling than when growing in woods and sheltered places.

†† *Stems procumbent.*

8. *H. elodes*, L. *Marsh St. John's-wort*. "Sepals with (red-dish) glandular serratures glabrous, leaves roundish shaggy, stem rounded creeping, panicle of few flowers."—*Br. Fl.* p. 81. *E. B. t.* 109.

In spongy bogs, shallow ditches, drains and watery moory ground; frequent. *Fl.* July, August. 24.

In ditches on the western skirts of Lake common, abundantly in several places. In the moors near Godshill. Ditches in the boggy valley of the Medina, about Cridmore, Rookley, &c.

Capsule unilocular, without any placenta, according to Aug. St. Hilaire. See obs. on the genus *Sarothrum* in Hooker's Bot. Misc. vol. iii. p. 236.

III. PARNASSIA, Linn. Grass of Parnassus.

"*Stamens* with as many intermediate nectaries fringed with globular-headed filaments."—*Br. Fl.*

1. *P. palustris*, L. *Common Grass of Parnassus*. "Bristles of the nectary 9—13, leaves cordate cauline one amplexicaul."—*Br. Fl.* p. 51. *E. B.* t. 82.

In bogs and marshy meadows; extremely rare. *Fl.* August—October. 24.

Found many years ago on a piece of boggy land known as the Moor or Williams's Moor, at Oakfield, St. John's, by Mr. John Lawrence, gardener to [the late] Sir R. Simeon, Bart. The meadow has since been drained, and the plant is extinct. Arreton! Mr. G. Kirkpatrick, who finds it is so marked in his copy of B. T. W., but does not remember gathering it there.

A plant with flowers of great beauty and singularity of structure, the natural affinities of which, from its anomaly in this respect, are not well ascertained.

Order XVIII. ACERACEÆ, Juss.

"*Calyx* 4—5—9 partite, imbricated in æstivation. *Petals* of the same number, with scarcely any claw, inserted into the margin of an hypogynous disk, or wanting. *Stamens* about 8, inserted on the disk. *Ovary* 2-lobed, 2-celled. *Style* 1. *Stigmas* 2. *Fruit* a double samara, each 1-celled, with 1 or 2 erect seeds. *Albumen* 0. *Embryo* curved, with foliaceous wrinkled cotyledons, and an inferior radicle."—*Br. Fl.*

I. ACER, Linn. Maple.

Flowers polygamous. *Calyx* lobed or partite. *Corolla* of several petals.

"In massy foliage of a sunny green
The splendid sycamore adorns the spring,
Adding rich beauties to the varied scene,
That Nature's breathing arts alone can bring.
Hark! how the insects hum around, and sing,
Like happy Ariels hid from heedless view—
And merry bees, that feed, with eager wing,
On the broad leaves, glaz'd o'er with honey dew.
The fairy sunshine gently flickers through
Upon the grass, and butter-cups below;
And in the foliage winds their sports renew,
Waving a shade romantic to and fro,
That o'er the mind in sweet disorder flings
A fitting dream of Beauty's fading things."

Clare, *Rural Muse*, p. 128.

*1. *A. Pseudo-platanus*, L. *Greater Maple*. *Sycamore*. Leaves broadly and palmately 5-lobed the sinuses acute, lobes undivided coarsely and unequally dentate serrate plicato-rugose acuminate the 3 anterior largest nearly equal, racemes pendulous cylindrical many-flowered compound at the base, germen villous, wings of the fruit deflexed converging. *Br. Fl.* p. 82. *E. B.* t 303.

Naturalized here and there in hedgerows and bushy places. *Fl.* April, May.

E. Med.—Near Lessland farm, about the great withy-bed, apparently quite naturalized. Abundantly on the slipped clay-banks by the shore at the Priory. I observe the sides of Ashey Down above Knighton to be covered with abundant seedlings of this tree, although no full-grown plants are to be seen in its vicinity. *Dr. Bell-Salter* has remarked the same thing.

W. Med.—Naturalized on the woody banks about Gatcombe. By the roadside going into Chale from Blackgang.

A handsome tree, of broad ample foliage, sometimes of great height, in this island seldom exceeding 40 or 50 feet, the branches in young trees long, straight and nearly upright, in old ones much and irregularly ramified, crooked and spreading, covered like the trunk with a light-coloured smoothish bark, and forming for the most part an umbrageous round-topped or spherical head. Leaves opposite, broadly palmate, mostly large, but extremely unequal in size on different parts of the same tree, usually as wide or even rather wider than long, often 8 or 9 inches broad and nearly as many deep, submembranaceous, plicately rugose with depressed venation, somewhat glaucous beneath, with 5 or 7 strong nearly cylindrical ribs, mostly glabrous on both surfaces, except a few tufts of pubescence in the axils of the ribs beneath, and along their sides near their point of union with the petiole, more rarely downy all over, subcordate, rounded or almost truncate at the base, 5-lobed, the intermediate clefts or sinuses acute; lobes unequally and variously dentato-serrate, the serratures coarsely and sharply but not deeply cut, the two basal lobes usually much smaller and shallower than the three nearly equal anterior ones, and sometimes almost obsolete, all more or less acute or acuminate, undivided, or at most slightly 3-lobed. *Petioles* various in length, from about 2 to 5 or 6 inches, terete, those on the young shoots and suckers mostly of a bright coral-red. *Racemes* terminal, from the axils of the ultimate pair of leaves, and completely developed when the latter have attained their full size and firmness, pendulous, somewhat compound at the base only, conico-cylindrical, obtuse, from about 3 to 6 inches long, the common stalk or axis glabrous or hairy. *Flowers* numerous, greenish, on patent slightly hairy pedicels of about 4 or 5 lines in length and a little enlarged upwards, placed mostly 2, 3, or 4 together. *Bracts* solitary at the base of the pedicels, minute, linear-lanceolate or subulate. *Calyx* smooth externally, hairy within near the base, the segments oblong or sublinear, obtuse. *Petals* similar to the calyx-segments but narrower. *Stamens* 8—12 (mostly 8), as long as or longer than the calyx; *filaments* hairy in their lower part; *anthers* yellowish green. *Style* rather long; *stigmas* flat, revolute, glanduloso-pilose, sometimes 3. *Germen* densely villous, often abortive, bicuspidate and 2-lobed, sometimes trilobate and tricuspidate.

This tree is indigenous to Central and Southern Europe in mountain forests, and I suspect in some upland districts of Britain (Mr. Winch considers it as truly indigenous to the upland moors of Northumberland and Durham). A moist cool atmosphere is most congenial to its growth, and it attains a very large size in the Highlands and W. of Scotland, where the wood is much employed for bowls and other articles of turnery. With us it seldom attains to great dimensions, but is valuable from its power of withstanding the sea air, so detrimental to most other trees.

2. *A. campestre*, L. *Common or Lesser Maple*. Leaves small palmately 5-lobed the sinuses mostly acute, lobes without serratures the basal pair small short usually undivided, the 3 anterior sinuately subtrifid at the apex, the segments obtuse or slightly pointed entire or subtrifidly sinuate or waved, middle lobe largest narrowing behind to the base, corymbs erect few-flowered downy, wings of the glabrous (?) fruit widely diverging. *Br. Fl.* p. 82. *E. B.* t. 304.

In woods and hedges, most abundantly in every part of the island. *Fl.* May, June. *Fr.* August, September. *h.*

A tree of considerable beauty, and when left to itself of usually rounded outline, and though naturally of humble growth, sometimes attaining to a respectable size and height. With us it is more frequently seen as a robust shrub, constituting a pretty large proportion of the undergrowth of our woods. *Branches* opposite, straight and spreading horizontally, the older ones often covered with rugged corky wings or ridges. *Leaves* opposite, smaller than in any other species of the genus except *A. Monspessulanum*, about as broad as or sometimes rather broader than long, of a somewhat firm dry texture, flat, deep dark green above and glabrous, much paler and slightly downy beneath with tufts of short hairs in the axils of the main nerves, deeply and palmately 5-lobed, the sinuses mostly acute, at other times obtuse or even rounded, lobes entire (not serrated), the basal pair much the smallest and shortest, divaricate, mostly rounded and undivided or subsinuate, the 3 anterior pointing forward, the middle one largest, subtrifidly lobed or sinuate at their apex, the segments usually very obtuse, sometimes a little acute, occasionally again subtrifidly sinuate, at other times the lobes themselves are undivided, the middle lobe (and often the two lateral anterior) is narrowed behind to the base or wedge-shaped. *Petioles* terete, downy, variable in length, almost connate by their tumid bulb-like bases. *Racemes* corymbose, erect or somewhat lax, terminal on the young branches and lateral shoots, and from the same buds as the leaves, small, about $1\frac{1}{2}$ to 2 inches long, compound, on subcompressed grooved peduncles of variable length, more or less downy. *Bracts* at the base of the pedicels and branches small, lanceolate, caducous, the upper ones very minute, the lowermost of all occasionally leafy. *Flowers* rather few, appearing just after the leaves, and before the latter have acquired their proper firmness and colour, small (3 or 4 lines in diameter), herbaceous, on erect or spreading mostly very downy pedicels, of very unequal length. *Calyx* hairy externally, the segments oblong, rounded, unequal. *Petals* as long as or rather longer than the calyx, narrowly obovate or spatulate, attenuated downwards, obtuse. *Stamens* 8, often 9 or 10, standing in sinuses formed by the lobes of the fleshy melliferous disk, sometimes imperfect, much shorter than the calyx and almost concealed by the closing together of the latter and the petals on the germen, when fully developed mostly longer than the perianth and spreading; *filaments* subulate, terete, glabrous; *anthers* greenish yellow, oblongo-elliptical, mostly a little hairy, sometimes glabrous. *Germen* nearly semiorbicular, emarginate, much compressed, with a thin sharp border, often abortive. *Style* tapering; *stigmas* 2, revolute. *Samaræ* nodding or pendulous, greenish or reddish, slightly downy, mostly about 2 or $2\frac{1}{2}$ inches in width between the tips of the horizontally spreading, strongly veined, glabrous wings, whose posterior margin is thickened and more or less recurved, the anterior very thin, rounded and dilated into an oblong, broad and oblique lobe.

The leaves of the common Maple assume a rich orange-yellow or nearly scarlet hue in decay, and impart a vivid tint to our autumnal woodland scenery. The largest specimen I am acquainted with in the island grows at Nunwell, and when measured in February, 1845, girded 10 feet at 5 feet from the ground, branching into a rounded head of about 30 or 40 feet in height; there is also a particularly fine specimen at the top of a hilly pasture between Knighton west wood and the road. The finest examples however of the species I have ever seen are in the

Prater at Vienna, where they rival the oaks of that most magnificent of parks in magnitude.

Several varieties of this tree occur, distinguished by the more or less acute lobing, smoothness or hairiness of the leaves and fruit, some of which have been considered as separate species by the continental botanists. With us the Field Maple does not vary much; as in other species, the flowers are occasionally imperfect in some of their organs, or polygamous.

This is one of the few European Maples that prefer low and warm situations in the plains, to cool, moist and hilly or mountainous localities.

It is 'under the canopy of a venerable Maple in the author's native parish of Boldre, of which the town of Lymington is a part, that the pious and ingenious Gilpin reposes, amidst scenes long blessed by his pastoral labours, and illustrated by his pen and pencil.

Order XIX. GERANIACEÆ, *Juss.*

"*Sepals* 5, persistent, with an imbricated æstivation. *Petals* 5, with a claw. *Stamens* generally monadelphous and twice as many as there are petals, some occasionally abortive. *Ovary* 5-lobed, terminated by a long thick beak (*torus* or *gynobase*), and 5 *stigmas*. *Carpels* 5, 1-celled, ultimately separating from the base of the beak, together with a long elastic awn (*the style*). *Seed* solitary, without albumen. *Embryo* curved. *Cotyledons* convolute and plaited.—Herbs or shrubs, with leaves opposite at the joints, or alternate and then opposite the peduncles. No tendrils." — *Br. Fl.*

I. GERANIUM, *Linn.* Crane's-bill.

"*Petals* regular. *Stamens* 10, slightly monadelphous; 5 outer ones opposite the petals, rarely sterile; the other 5 alternating, larger, with a gland at their base. *Capsules* each with a long glabrous recurved awn." — *Br. Fl.*

1. *G. Robertianum*, *L.* *Stinking Crane's-bill.* *Herb Robert.* "Leaves 2 with 3 or 5 deep lanceolate inciso-pinnatifid acuminate segments, calyx angular hairy, claw of petals glabrous, capsules transversely wrinkled, seeds without dots." — *Br. Fl.* p. 84. *E. B. t.* 1486.

β. *purpureum*, *G.* *purpureum*, *Forst. E. B. Suppl. t.* 2648.

γ. Flowers pure white.

Common everywhere in moist shady situations, woods, groves, on rocks, old walls, hedgebanks and rough stony places. *Fl.* April–September. ☉. or ♂. (ex Koch).

β. On the shore near the Priory.

γ. Wood near Norris Castle.

2. *G. lucidum*, *L.* *Shining Crane's Bill.* "Leaves roundish 5-lobed, lobes trifid and notched obtuse with a short mucro, calyx pyramidal angular dentato-tuberculate, claw of petals glabrous, capsules transversely wrinkled, seeds without dots." — *Br. Fl.* p. 84. *E. B. t.* 75.

On shady rocks, walls, banks, thatched roofs, and in rough stony woods and thickets; one of our rarer species. *Fl.* May—August. ☉.

E. Med.—On stone fences about St. Lawrence, and along the path ascending from thence to Pelham woods, in plenty. Between Niton and Blackgang, abundantly, *Dr. Martin*. Walls about Sir Willoughby Gordon's, near Niton, *id.* !!!

W. Med.—Abundantly along the roadside on the right-hand hedgebank just out of Calbourne, going to Newport. In plenty by the Newport road, about half a mile from Shorwell towards Cheverton, and still more abundantly on both sides of the lane leading up to the down from the road on the right-hand before ascending the hill into Shorwell. All along the wall of West-cliff house, Niton. Between Newport and the barracks, *Mr. Snook, B. T. W.*

An elegant though not showy species, known from the last by its round smooth leaves and smaller flowers. *Root* whitish, small and slender, with a few long fibres at the end. *Stems* numerous, spreading or erect, round, solid, shining, smooth and succulent, much and oppositely branched, swollen at the joints, where they are exceedingly brittle, and becoming by age or exposure to light blood-red in their lower part, chiefly $1\frac{1}{2}$ —2 feet in length. *Leaves* lucid green, shining, opposite, stalked, the lower ones on very long petioles, a little hairy above, rotundato-reniform, nearly orbicular, deeply 5-lobed, the lobes roundish wedge-shaped, trifid, their segments rounded, slightly 3-cleft or notched and tipped with a minute reddish and obtuse point. *Stipules* oblongo-lanceolate. *Petioles* a little downy. *Peduncles* solitary, longer than the leaves, downy. *Flowers* on diverging pedicels, much like those of *G. Robertianum*, but smaller, bright pink. *Bracts* at the bifurcation of the pedicels, small, lanceolate, mostly coloured. *Calyx* ovato-pyramidal, acutely pentagonal, the angles winged, with an intermediate ridge or keel and several (3 or 4) lateral transverse folds or puckers; the *sepals* aristate, very unequal in breadth, 2 of them lanceolate, white and membranous, with a green keel, but no lateral wings or angles like the rest. *Petals* longer than the calyx, obovate, entire, with long slender claws. *Stamens* 10, all perfect, their *filaments* flat, membranous and tapering, persistent after the falling away of the roundish 2-lobed yellow *anthers*; *pollen* of several large yellow globules. *Style* tapering, its 5 angles roughish on the upper part with bristly hairs pointing upwards; *stigmas* 5, pale rose-coloured. *Capsules* brownish, compressed, a little bristly with 3 rough longitudinal crests or keels and prominent lateral reticulations, separating elastically when ripe by the action of the long tapering awns. *Seeds* pale reddish brown, ovate or oblong, quite smooth.

The bruised herb possesses, though in a much less degree, the unpleasant smell of the last species.

3. *G. rotundifolium*, L. *Round-leaved Crane's-bill*. Leaves roundish or reniform palmately lobed and cut downy, petals entire the length of the calyx, capsules even hairy, seeds dotted. *Br. Fl.* p. 84. *E. B. t.* 157. *G. malvaceum*, *Burman*: *Wahlenb. Succ.* p. 434, n. 774.

In rough stony thickets and pastures, on waste ground, walls and banks, but very local. *Fl.* May—July. ☉.

E. Med.—Abundant at St. Lawrence, on hedgebanks near the church, and in great profusion in a rough field between it and the Priory or Woolverton, *Rev. G. E. Smith* and *Dr. Martin* !!! Abundant below the cliffs a little North-east of St. Lawrence's church.

Root with several stout fibres. *Stems* numerous, much branched, spreading or partly prostrate, about a foot high, forming a bushy herb, round, brittle, reddish, and downy all over with soft spreading hairs. *Leaves* opposite, on very long round footstalks, nearly circular in their outline, more or less deeply 5-lobed, the lobes themselves variously cut and serrated, very soft and downy, especially beneath. *Stipules* reddish, lanceolate. *Peduncles* 2-flowered, axillary. *Sepals* elliptical-lanceolate, with 3 strong nerves, ending in a straight short and obtuse

awn bristly at the summit. *Petals* small, pink, entire or with a slight notch, and very slender white claws. *Capsules* greenish gray, elliptical-oblong, scarcely compressed, not wrinkled, hispid with white erect hairs, and with a thin dorsal hardly prominent keel, ending at the base of the capsule in a short blunt apex, which is bearded on the inner side chiefly with long white bristles, beak long, clothed with short pubescence, intermixed towards the base with longer gland-tipped and spreading hairs. *Seeds* broadly ovate or elliptical, brownish, covered with a prominent often whitish net of mostly hexagonal cells.

4. *G. molle*, L. *Dove's-foot Crane's-bill*. "Leaves rounded or reniform lobed and cut downy, their segments obtuse, petals notched scarcely longer than the calyx, their claws bearded, capsules transversely wrinkled, seeds without dots."—*Br. Fl.* p. 84. *E. B.* t. 778.

β. Flowers white.

γ. Flowers smaller; petals scarcely longer than the calyx; leaves more deeply incised.

In dry waste and cultivated ground, fields and pastures, on hedgebanks and by waysides; very common. *Fl.* May—August. ☉.

The variety with white flowers is common in the island.

γ. By Quarr Abbey. Sandy banks of Alverstone farm, with *G. pusillum*.

The herbage has a perceptible musky fragrance on a warm day, in addition to its usual rather strong odour, and which is retained for some time after the plant is gathered.

This species has none of the brittleness of the last and some others of the genus. *Seeds* roundish ovoid, pale brown.

The var. γ. may be easily mistaken for *G. pusillum*, nor are they easily distinguished without close examination of the stamens and capsules.

5. *G. pusillum*, L. *Small-flowered Crane's-bill*. "Petals notched, anther-bearing stamens 5, leaves rounded or reniform palmate with 5—7 deep trifid lobes, capsules smooth carinated downy with erect appressed hairs, seeds without dots."—*Br. Fl.* p. 84. *E. B.* t. 385. *Fl. Dan.* xii. t. 1994 (bona).

In similar places with the last, but much less frequently, and mostly on a sandy soil. *Fl.* May—August. ☉.

E. Med.—In considerable plenty and very large in a sandy field close to and immediately in front of Bridge Court farm-house. On a hedgebank just out of Shanklin towards Cliff farm. Clover-field by Lee farm, near Shanklin. Sandy field near Alverstone in some plenty, and in the dry part of Alverstone Lynch. Amongst clover in the vicarage glebe at Newchurch, in great abundance, also near Alverstone farm. Apparently not unfrequent about Newchurch. Fields above Sandown bay.

The present plant so very closely resembles the preceding as to be easily overlooked for that species. The following characters will be found to distinguish *G. pusillum*. *Stems* generally redder in colour, the pubescence far shorter, finer and more or less deflexed. *Leaves* more deeply cleft. *Flowers* much smaller, except in var. γ. of *G. molle*, more inclining to blue or purplish, their pedicels I think rather longer in proportion to the peduncles, and more suddenly bent or at a more acute angle immediately beneath the flower than in *G. molle*, in which the curvature is lower down on the pedicel and more considerable in amount of flexure. *Sepals* somewhat less obtuse. *Petals* much narrower, wedge- rather than heart-shaped, with longer more slender claws, simply 3-, not as in the last sub-5-nerved, appearing from their greater narrowness to stand widely apart, usually about the length of the calyx, rarely considerably (nearly twice) longer. *Anthers* 5, the other stamens (always?) abortive. *Styles* pale, erect, not as in *G. molle*, spreading, scarcely so long as the stamens. *Capsule* very downy, not wrinkled, when unripe

with a broad conspicuous green keel down the centre, not found in those of *G. molle*. *Seeds* oblong, subreniform, slightly compressed, dull brown, smooth.

The herbage is destitute of the faint musky smell perceptible in that of *G. molle* when fresh gathered.

6. *G. dissectum*, L. *Cut-leaved Crane's-bill*. Peduncles 2-flowered shorter than the leaves, root- and lower stem-leaves reniform-orbicular deeply and palmately 5—7 partite, the lobes cuneate trifid with 3—5 cleft bluntish segments, uppermost leaves lacinate, the segments very narrow linear acute, pedicels, calyx and styles glandulose-pubescent, sepals awned ovate-elliptical much longer than broad, petals emarginate shorter than the calyx-awns, carpels hispid not wrinkled, seeds conspicuously areolate punctate. *Br. Fl.* p. 85. *E. B. t.* 753.

In dry gravelly fields, pastures, waste and cultivated ground, on banks and along hedges; very plentiful. *Fl.* May—October. *Fr.* June. ☉.

Root annual, long, slender, not much branched or fibrous, pale brown. *Stems* 1 or more, from a foot or under to 2 or 3 feet long, weak and straggling, ascending at base and reclining, or widely spreading, decumbent and prostrate; in the smaller specimens or when growing amongst other herbage erect or nearly so, and according to the size sparingly or considerably dichotomously branched, pale green or here and there tinged with red, subcompressed and somewhat angular, a little enlarged or tumid at each node on its upper side, copiously clothed with white mostly deflexed pubescence, sometimes so abundantly as to be quite hoary, the hairs on the greater part of the stem simple, but at the extreme portion wholly or partially gland-tipped and spreading, as they are on the peduncles, calyx and fruit. *Leaves* all reniform-orbicular in outline, very deeply 5-parted, the lobes wedge-shaped, mostly 3-cleft, the segments again bifidly or trifidly incised, unequal, entire, broad and obtuse in the lower, narrower and acute in the upper leaves, light green above, paler beneath, roughish pubescent on both sides with white rigid hairs pointing forward, and with which the margins of the leaves are likewise fringed, strongly ribbed on the under side, the rib setosely pubescent. *Petioles* opposite the branches at the forks, very hairy, of the root-, lower and even middle stem-leaves extremely long, those of the first often a foot or more in length, of the uppermost leaves very short or nearly obsolete. *Stipules*,—a pair at the base of each petiole, purplish red or sometimes uncoloured, erect, lanceolate, with long tapering points; entire, bifid, or slightly toothed or lobed, strongly fringed. *Peduncles* 2- or occasionally 3-flowered, in the forks of the branches, greatly lengthened out after flowering, mostly much shorter than the leaves, hairy like the pedicels and calyx. *Calyx* and *pedicels* shortish, hairy, a little enlarged upwards and somewhat unequal, each with a pair of subulate coloured bracts at base, at length curved or ascending in fruit. *Flowers* small, appearing as it were nestled amongst the upper leaves, seldom much expanded except when exposed to full sunshine. *Calyx* longer than the petals by nearly the length of the awns, villous with mostly gland-tipped hairs; *sepals* persistent, enlarged after flowering, entire, unequal in breadth, 2 of them narrower and elliptic-lanceolate, the 3 others ovate-elliptical, plane or a little concave, and traversed by 3—5 prominent very broad ribs, their margins very narrowly scarious or membranaceous, their obtuse summits tipped with a production of the midrib into a cylindrical or flattened blunt awn, about $\frac{1}{2}$ of their own length. *Petals* very fugacious, bright purplish pink or deep rose-colour, shorter than the calyx-awn, cuneate-obcordate, broadly or retusely emarginate, with 3—5 very distinct pellucid nerves, suddenly contracted into short, very pointed, colourless claws, just above which are a few white hairs or ciliæ. *Stamens* all perfect, about $\frac{1}{2}$ as long as the petals, deciduous, the 5 exterior rather shorter than the rest; *filaments* greenish, much flattened and ciliated, somewhat fringed; *anthers* dilute violet-blue or white, the commissures deep blue, suborbicular, very flat at the back; *pollen* globose, bluish. *Styles* as

long as the 5 inner stamens, their free summits (*stigmas*) shortly spreading, yellowish and glandulose, purplish behind, very obtuse, persistent, their cohering part forming the beak, rough with erect finally spreading hairs, which are all gland-tipped, but intermixed with shorter and simple pubescence, those on the finely punctate ovaries at their base for the most part simple as on the stem and leaf-stalks. *Carpels* blackish brown, ovoid or subglobose, not wrinkled, hispid all over with shortish, pale, erect, mostly simple hairs, a few capitate ones descending from the cohering styles being commonly intermixed, and together with the beak of the cohering styles 6 or 7 lines in length. *Seeds* dull dark brown, ovoido-globose, glabrous, very conspicuously and copiously reticulated with angular cells, of nearly the form and regularity of a honeycomb.

There is the greatest affinity betwixt our European plant and the *G. carolinianum* of N. America, so much indeed that the specific characters laid down in the books will not avail to distinguish them. I have carefully examined the latter in its native soil, where, in the southern and western parts of the United States, it is an abundant weed everywhere in waste and cultivated ground, with perfectly the habit of its congener, *G. dissectum*. From the description I drew up at the time from fresh specimens, and aided by a good series of dried ones collected by myself in Louisiana in May, 1847, I am enabled to state the differences between them, with, I trust, greater precision than has yet been accomplished. The leaves of *G. carolinianum* are in general less deeply parted than in *G. dissectum*, the segments usually shorter and broader, those of the uppermost leaves particularly are less laciniately divided, and more resemble the lower and radical leaves; the hairs on the calyces, pedicels and beak of the carpels are simple, with scarcely any intermixture of gland-tipped setæ; the sepals are decidedly broader and more truly ovate, at least the 3 larger, which are nearly as broad as long, with more distant ribs, their sides often bent backwards like wings, which is not the case in our plant; the flowers are less conspicuous, the petals extremely pale or nearly colourless, somewhat abrupt or truncate at top, with the emargination oblique or unequal, the anthers white, the hairs on the mature carpels much (about twice) longer or more shaggy, and blackish; seeds larger than in *G. dissectum*, paler, much less distinctly and more superficially areolate, the meshes rather oblong and far less equal in form and dimensions.

7. *G. columbinum*, L. *Long-stalked Crane's-bill*. "Peduncles longer than the leaves which are 5-partite, the lobes divided into many acute segments, petals entire as long as the much-awned calyx, capsules even glabrous, seeds dotted."—*Br. Fl.* p. 85. *E. B.* t. 259.

In woods, thickets, pastures, waste places and by roadsides, on dry gravelly or calcareous soils; not very frequent. *Fl.* June—October. ☉.

E. Med.—On a furzy spot on St. George's Down. On Ninham hill (sandy heath), near Shanklin. Field between Bloodstone and Eagle-head copses, very sparingly. Abundantly in a sloping wood called Wearnhill copse, near Yarbridge, on the right of the road from thence to Bembridge and Yaverland, and nearly facing the town of Brading. On a chalky bank by the roadside close to Yarbridge, towards Yaverland. Fields near Bembridge Down, *Wm. Wilson Saunders, Esq.*

W. Med.—In Bottom-ground copse (where *Vinca minor* grows), near Idlecombe. Apparently not unfrequent in chalky thickets under Buccombe Down, &c. Woods in the valley at Apes Down and various places about Carisbrooke. In Slucombe copse, a little W. of Roughborough farm. Roadside near Afton farm, Freshwater. Generally diffused over the whole chalk district of the South-west of the island.

G. pyrenaicum? *Reichenb.* (not of *Sm.* and *Brit. authors*).—About Steepphill and Bonchurch, *J. A. Hankey, Esq.* Mr. H. finds a plant, not uncommonly, at the back of the island closely resembling *G. molle*, but having the capsules neither

wrinkled as in that, nor hairy as in *G. pusillum*, and which both himself and Mr. W. Saunders conceive may be the *G. pyrenaicum*, Reich.

G. pratense. — Isle of Wight, Miss Twining in Watson's 'Cybele Britannica,' vol. i. p. 261.

II. ERODIUM, *L'Herit.* Stork's-bill.

"*Petals* regular. *Stamens* 10, slightly monadelphous at the base; 5 opposite the petals sterile; the other 5 alternating with a *gland* at their base. *Capsules* each with a long spiral *awn*, bearded on the inside."—*Br. Fl.*

1. *E. cicutarium*, Sm. *Hemlock-leaved Stork's-bill*. "Peduncles many-flowered, leaves pinnate, leaflets sessile pinnatifid and cut, petals longer than the calyx, stems prostrate hairy."—*Br. Fl.* p. 85. *E. B.* t. 1768.

β. Flowers white.

In waste places, by waysides, borders of fields, and on dry hedgebanks, particularly on a sandy soil; very common. *Fl.* June—September. ☉.

β. Sandown, frequent.

"Perfect *stamens* glabrous, dilated but not toothed at the base."—*Br. Fl.*

2. *E. moschatum*, Sm. *Musky Stork's-bill*. "Peduncles many-flowered, leaves pinnate, leaflets nearly sessile ovate unequally cut, perfect stamens toothed at the base, stems depressed hairy."—*Br. Fl.* p. 85. *E. B.* t. 902.

In dry pastures, by roadsides, the borders of fields and waste places, rare. *Fl.* June, July. ☉.

W. Med.—Found a few years back near Yarmouth, by Mr. Butler, of the Bugle Inn, but since looked for unsuccessfully on the station, which looked like a wild one. I have it as gathered near the same town in a list of plants lately received, but have never met with it wild myself.

"Larger than the last, and with much less deeply cut *leaflets*, which yield a powerful smell of musk."—*Br. Fl.*

3. *E. maritimum*, Sm. *Sea-side Stork's-bill*. "Peduncles 1—2 flowered, leaves simple ovato-cordate stalked lobed and crenate, stems depressed slightly hairy."—*Br. Fl.* p. 86. *E. B.* t. 646.

On dry sandy banks, pastures, and waste ground by the sea; sometimes (though rarely, and not with us) far inland; very local. *Fl.* May—September. ☉.

Plentiful in the narrow gorge forming the descent into Alum Bay, especially abundant and luxuriant at the mouths of the rabbit-burrows, where it was pointed out to me by the Rev. Gerard E. Smith. At Brook, on a bank by the way to the chine in some plenty. Cliffs near Freshwater, Mr. F. Lees in Watson's New Bot. Guide, Suppl. On Headon Hill, at a considerable elevation.

Root slender, fleshy and tapering, reddish, nearly or quite simple. *Stems* numerous, from 3 to 9 or 12 inches long, irregularly branched, leafy, quite prostrate, usually spreading in all directions, and forming depressed dense tufts, rounded, jointed, stiff, brittle and succulent, smooth or slightly hairy.

Order XX. OXALIDACEÆ, DC.

"*Flowers* regular. *Sepals* 5, persistent. *Petals* 5, equal, often cohering at the base and twisted in æstivation. *Stamens* 10, the 5 inner ones opposite the petals and longer than the others; *anthers* distinct, 2-celled. *Ovary* 1, 5-celled. *Styles* 5. *Stigmas* usually capitate or somewhat bifid. *Fruit* a capsule, with 5 or 10 valves, or indehiscent. *Seeds* attached to the axis, usually with an elastic fleshy outer integument, which, on bursting open, projects the seed to a distance. *Embryo* in a cartilaginous albumen, with its *radicle* towards the *hilum*.—*Mostly* herbs, with compound acid leaves; some of them highly sensitive."—*Br. Fl.*

I. OXALIS, Linn. Wood-sorrel.

"*Calyx* not bracteated at the base. *Filaments* slightly combined below. *Capsule* angular, 5-celled. *Seeds* with an elastic integument."—*Br. Fl.*

1. *O. Acetosella*, L. *Common Wood-sorrel*. Stemless, leaves all radical ternate, leaflets inversely heart-shaped hairy, scapes single-flowered longer than the leafstalks, root scaly creeping. *Br. Fl.* p. 87. *E. B.* t. 763.

In moist woods, groves and damp shady places, about the roots and stumps of moss-grown or decayed trees, and in alder-thickets; not very general. *Fl.* April, May. 24.

E. Med.—In St. John's Wood and elsewhere about Ryde, occasionally. By Quarr Abbey, sparingly. Boggy thickets at the extremity of Apse Castle towards Ninham, and at America. Abundant in the vale of Newchurch, in dark boggy thickets.

W. Med.—Little Standen Wood, near Newport.

A tender succulent plant, the leaf- and flower-stalks subdiaphanous and usually tinged with pale red or purple. *Root* consisting of tufts of thickly interwoven, branched, capillary, pale brown fibres, emitted at intervals from the long, horizontally creeping, filiform rhizoma, which enlarges at short distances into knotty portions, consisting of imbricated, fleshy, bulb-like, conical protuberances flattened on the upper side and often truncated at top, and which are the enlarged persistent bases of the leafstalks of former seasons. *Leaves* all radical, in fascicles from the apex of a former year's shoots or from fresh ones, ternate, orbicular in circumscription, of a beautiful tender bright green above, grayish or whitish underneath, or suffused with violet-purple, various in size, from about 1 to 2½ inches across; *leaflets* of a thin, flaccid and somewhat moist texture, roundish obcordate or wider than long, subcuneate at base, shallowly emarginate, all but quite sessile, strongly and almost elastically deflexed after gathering or at night, sprinkled on both sides with scattered hairs, with which the margins are slightly ciliated. *Petioles* lax, various (from 2 to 3 or 4 inches) in length, subterete, slightly channelled above, appearing jointed on the enlarged, conical, somewhat hairy, fleshy and persistent base, and retained on it by a strong white central chord, flexuose, reddish or purplish like the flower-stalks, and clothed as are those with scattered silky hairs, most numerous at the top and bottom, often nearly glabrous. *Scape* springing from the concave enlarged bases of the leafstalks, but not itself enlarged below, 1, 2 or

3 from the same scaly tuft or knot, lax, as long as or longer than the leaves, single-flowered, wavy, terete, more or less clothed with fine silky hairs, especially at the summit, furnished above the middle with a pair of small, appressed, purplish bracts. Flowers very delicate and fugacious, nodding. Calyx bell-shaped; sepals ovato-elliptical, very obtuse, nearly equal, a little fringed on their entire margins, scarcely combined at base. Corolla bell-shaped; petals very thin and delicate, somewhat diaphanous, 2 or 3 times the length of the calyx, cuneato-obovate, somewhat waved or sinuate at top, cohering together just above their short abrupt claws by a gland-like projection or thickening of their substance, commonly white faintly tinged with rose-colour, elegantly streaked with purple lines, and having a spot of golden-yellow below the centre of each. Stamens 10, alternately unequal in length, their filaments white, dilated and combined below into a thickened glandular ring; anthers white, innate, of 2 roundish lobes. Styles 5, white, very slender, erect, straight, glabrous, a little thickened at top or subcapitate.

A violet-flowered variety of this species grows in many parts of the kingdom, which I have never seen, nor am I aware of its occurrence in this island. Gerarde speaks of a variety with red flowers.

*2. *O. corniculata*, L. *Yellow Procumbent Wood-sorrel*. "Stem branched, branches procumbent, peduncles mostly 2-flowered shorter than the ternate leaves, stipules united to the base of the petioles."—*Br. Fl.* p. 87. *E. B. t.* 1726. *Fl. Dan.* x. t. 1753.

On banks and waste shady cultivated places; very rare, and certainly introduced. *Fl.* May—October. ☉.

About the grounds at Steephill, *Albert Hambrough, Esq.!!!* A weed in the garden at Alverstoke mill, by Newchurch, *id.!!!*

The whole plant clothed with soft hairs, except the leaves, which are nearly glabrous. Stems numerous, copiously branched and downy, at first somewhat erect or ascending? (*Dr. Bell-Salter*), but at the close of summer spreading on the ground in all directions, from a few inches to a foot and upwards. Leaves various in size, of 3 broad inversely heart-shaped leaflets, a little hairy at the edges and principal veins only, upon rather long villous petioles, at the base of each and united with it are a pair of small ciliated stipules. Hairs on the pedicels appressed, those on the peduncles spreading. Flowers pedicellate, yellow, much smaller than in the last, opening only in warm, dry, sunny weather, mostly in pairs, sometimes 3 or 4 together, on solitary, compressed, axillary and hairy peduncles that either equal, exceed, or are shorter than the leafstalks. Sepals ovato-lanceolate. Capsules prismatic, downy, with 5 prominent angles suddenly tapering at the end. Seeds numerous, oval, flattened, reddish brown, with several transverse ridges, invested with a white arillus that, bursting, discharges the seed elastically.

I observed this plant springing abundantly between the pitch-stones in the steep streets of Funchal in Madeira.

O. stricta, distinguished by its stouter, upright habit and absence of stipules, I found growing spontaneously as a weed (though sparingly) in the garden of the Rev. James Penfold of Thorley, near Yarmouth. Both this and *L. corniculata* appear to be more truly indigenous to America than to Europe, and were probably both derived to us from the western hemisphere, as the former is always thought to have been.

Subclass II. CALYCIFLORÆ.

"*Corolla (and usually the stamens) perigynous or inserted upon the calyx. Ovary either free or adnate with the tube of the calyx.*"
—*Br. Fl.*

Order XXI. CELASTRACEÆ, *R. Brown*.

"*Calyx 5-cleft, its base covered with a large, flat, fleshy disk, imbricated in æstivation. Petals 4—5, alternate with the sepals, arising from the edge of the disk. Stamens 4—5, alternate with the petals. Ovary wholly or in part immersed in the disk, 2—5 celled. Cells with 1 or many seeds. Fruit a capsule with 3—5 cells, and 3—5 septiferous valves, or dry drupe with 1 or 2 cells. Seeds erect, often arillate, never bony. Albumen copious, fleshy, with a straight embryo, flat cotyledons, and an inferior radicle.*—*Shrubs, with simple, mostly opposite leaves, and axillary cymes.*"
—*Br. Fl.*

I. EUONYMUS, *Linn.* Spindle-tree.

Calyx flat, 4—5 (rarely 6) cleft, inferior. *Petals* 4—5 (rarely 6), alternate, with as many stamens inserted on a fleshy perigynous disk. *Capsule* 3—5 lobed, with as many valves and 1—3 seeded cells, loculicidal. *Seeds* arilled.

Shrubs or low trees of the northern temperate zone, natives of Europe, Asia and America, mostly in mountainous districts, with opposite deciduous leaves, greenish, whitish or purplish, usually inconspicuous flowers, on forked axillary peduncles, large, smooth or warted capsules, and seeds wholly or in part enveloped in a coloured (orange or crimson) fleshy aril.

1. *E. europæus*, *L.* *Common Spindle-tree. Prickwood. Vect. Skewerwood, Skiverwood.* Flowers mostly tetrandrous, petals mostly 4 oblong pointed their edges revolute, peduncles compressed few-flowered, branches smooth, leaves oblongo-lanceolate finely serrulate glabrous, angles of the smooth capsule obtuse not winged. *Linn. Sp. Pl.* 286. *Sm. E. Fl.* i. 330. *Br. Fl.* 91. *Bab. Man.* 69. *E. B.* vi. t. 362. *Loud. Arb. Brit.* ii. 496, fig. 164. *Guimp. und Hayne, Deutschl. Holtzart.* i. 26, t. 16.

Very common in woods, hedges and bushy places. *Fl.* May, June. *Fr.* September, October. $\frac{1}{2}$.

β . *atrovirens*. Leaves smaller, dark green and shining.

E. Med.—Frequent everywhere about Ryde, as in Apley wood, Quarr, Biddlesford, Chillingwood and Firestone copses. Abundant in Eagle-head and Bloodstone copses, near Ashby. Plentiful in the Undercliff, and generally dispersed.

W. Med.—Tolt Copse and elsewhere about Gatcombe, common. Very large and abundant at Swainston, rising there to small trees, of great regularity in growth and outline. Plentiful about Shorwell, at Northcourt. Woods about Rowledge.

β. Swainston Park &c. A common state of the shrub.

A shrub or low tree, from 5 to 10 feet high, or even more in the wild state, in gardens often exceeding 30 feet, the smaller and younger branches quadrangular and covered with a greenish cuticle, the larger and lower rounded and clothed like the trunk. *Leaves* opposite, occasionally subalternate or subfasciculate, shortly stalked, ovate to ovato-lanceolate or oblongo-lanceolate, acute or acuminate, rounded or attenuated at base, those near the foot of the minor branches often partly obovate or elliptical, obtuse, smaller than the rest; finely and evenly crenulato-serrulate, quite glabrous, of a full, deep, often as in *β.* shining, green, when they bear some resemblance to those of the Chinese tea-tree. *Stipules* very small, subulate, extremely fugacious. *Peduncles* axillary, solitary or opposite, sometimes lateral, rigid, erect, patent or reflexed, compressed or divaricately forked at summit into from 2—5 single-flowered *pedicels*, that are unequal, stiff, variously spreading or deflexed, not elongated in fruit. *Flowers* greenish white, $\frac{1}{2}$ of an inch across, in this our only British species almost always tetrapetalous and tetrandrous, at least the later and more numerous, for the primordial blossoms are said to be as constantly 5-cleft and pentandrous. *Bracts* solitary, subulate, minute and deciduous at the base of the pedicels. *Petals* greenish white, broad at the base, ovate and slightly pointed, but on full expansion appearing narrow or lanceolate from reflexion of their margins, inserted beneath the fleshy perigynous disk, much exceeding the very short, round, concave and reflexed *sepals*. *Stamens* short, erect, inserted alternately with the petals on the lobes of the perigynous disk; *anthers* reddish, 2-lobed, bursting outwardly along their edges. *Style* short, furrowed and conical. *Ovary* quadrangular. *Capsule* smooth, coriaceous, of a fine pink or rose-colour, sometimes waxy white, 4- or 5-lobed, the angles obtuse, not at all winged, often unequal; 4- or 5-celled, the cells 1-, or more rarely 2-seeded, often partly abortive, widely dehiscing at the corners, and disclosing the white or purplish, ovoid and pointed seeds, completely invested with a bright, orange-coloured, wrinkled arillus. *Embryo* green, in the centre of the large fleshy albumen; *cotyledons* orbicular, flat; *radicle* inferior, cylindrical, exserted.

The capsules remain hanging on the tree long after the leaves have fallen. In 'English Botany' the capsule is drawn as if broadly winged, which I never saw nor heard of its being in our British species, though decidedly the case in *E. latifolius*. Has the fruit of this last been inadvertently substituted for *E. europæus* in the separate figure of the seed-vessel?

This is the only one of the three species of Spindle-tree indigenous to the continent, that inhabits indifferently the plains of Eastern and Western Europe and its islands. The remaining two, *E. latifolius* and *E. verrucosus*, are wanting to all its Atlantic or Oceanic Floras, and belong exclusively to the interior countries of the South and East, where they are subalpine shrubs, though the latter descends to the sea-level towards its North-eastern limit in Poland and Russia, whilst the former is, I believe, essentially a mountain species, nowhere to be found spontaneous at inconsiderable altitudes. The *E. atropurpureus*, Burning Bush of N. America, is the analogue in that country of the European *E. latifolius*, which it resembles in flowers, leaves and general habit, whilst the fruit is nearly that of our present species, but more deeply lobed, and the arils of the seed are rather crimson than orange. In like manner the *E. verrucosus* of Europe finds its trans-Atlantic representative in *E. americanus*, which resembles the former in many particulars of fruit, leaves and inflorescence.

Order XXII. RHAMNACEÆ, Juss.

"*Calyx* 4—5 cleft, valvate in æstivation. *Petals* 4—5, inserted on the summit of the tube of the calyx, shorter than and alternate with its lobes, sometimes wanting. *Stamens* 4—5, alternate with the calycine lobes. *Ovary* inferior, wholly or in part superior, 2—4 celled; *cells* with 1 erect *ovule*. *Fruit* fleshy and indehiscent, or dry and dehiscent. *Seeds* erect. *Albumen* fleshy, rarely wanting. *Embryo* straight; *cotyledons* large and flat, *radicle* inferior. — Shrubs or small trees, with simple, usually alternate leaves, minute stipules, and small greenish flowers."—*Br. Fl.*

I. RHAMNUS, Linn. Buckthorn.

"*Calyx* urceolate, 4—5 cleft. *Petals* nearly flat and notched, often wanting. *Stamens* with ovate, 2-celled *anthers*. *Disk* thin, covering the tube of the calyx. *Ovary* superior, 3—4 celled. *Berry* with 2—4 cartilaginous nuts, each 1-seeded."—*Br. Fl.*

The species of this genus affect inland places remote from the influence of the sea air, for which reason both our Buckthorns, and especially *R. catharticus*, are very rare in the more maritime climates of Scotland and Ireland, and are quite unknown in the Channel Islands, though common enough on the European continent farther North than any part of this kingdom.

1. *R. catharticus*, L. *Purging Buckthorn*. Stem erect, spines terminal, flowers mostly diœcious densely fascicled 4-cleft tetrandrous, leaves ovate or elliptical serrulate, berry 4-seeded. *Linn. Sp. Pl.* 279. *Sm. E. Fl.* i. 328. *Br. Fl.* 91. *Bab. Man.* 69. *E. B.* xxiii. t. 1629. *Loud. Arb. Brit.* ii. 531. fig. 198. *Guimp. und Hayne, Abbild. der Deutsch. Holtzart.* i. 23, t. 13.

In woods, copses and hedgerows of the interior, seldom near the coast; rare, and principally on the chalk in West Medina. *Fl.* May, June. *Fr.* September, October. $\frac{1}{2}$.

E. Med.—Copses on the northern slope of Arreton down, sparingly. In Eagle-head Copse, near Ashey, very sparingly. In a field-hedge a little to the right of the road descending upon Knighton from Ashey down, *Mr. W. Jolliffe*.

W. Med.—Amongst low brushwood by an arm of the Yar, a little to the right of the road from Yarmouth to Freshwater, between Thorley and Wilmingham, with leaves quite glabrous, excepting a few scattered hairs on the ribs beneath. Near Calbourne, and Calbourne New Barn. Elm Copse, near Calbourne. Wooded valley at Rowledge. Hedges and bushy banks in the neighbourhood of Roughborough farm. Rather plentiful in Tolt copse in its N.W. extremity, and sparingly in other chalky woods and thickets at the base of Gatcombe down.

A much-branched very rigid shrub or low tree, from about 5 or 6 to 10 or 12 feet high or upwards, with a trunk sometimes the thickness of the leg, usually much more slender, the branches straight, spreading, terminated frequently when old in a sharp thorn-like point, the extremity of the younger ones pilose; covered with a reddish brown, blackish or partly cinereous bark, which is rough on the trunk and larger branches, smooth and even on the smaller, the entire plant having much the aspect of some of the smaller-leaved varieties of the common Crab

or Wild Apple* tree. *Leaves* yellowish green, deciduous, inclosed together with the flowers in conspicuous buds, with dark brown, ovate, fringed scales, scattered, alternate or opposite, on the younger and flowering branches fascicled, from about $1\frac{1}{2}$ to 2 inches in length, ovate, roundish ovate, or broadly elliptical, more or less shortly acuminate, rounded, subcordate or slightly attenuated at the base, usually somewhat downy on both sides, but most so beneath, sometimes glabrous, finely and evenly crenulato-serrulate, with gland-tipped somewhat hooked serratures; 7-nerved, the 3 lateral nerves on each side of the midrib converging towards the apex of the leaf, by which this shrub may be known from every other of British growth except *Cornus sanguinea*, but in that the leaves are larger and quite entire. *Petioles* about half the length of the leaves or less, downy. *Stipules* linear, deciduous. *Flowers* small, greenish yellow, diœcious, or sometimes, it is said, polygamous, aggregate at the base of the leafy fascicles, the staminate mostly very numerous and crowded into nearly globose clusters concealing the branch, pistillate fewer and scattered. *Pedicels* solitary, single-flowered, scattered or aggregated, glabrous or downy. *Calyx* 4-cleft, the segments ovate, acute, 3-ribbed, in the staminate flowers spreading, in the pistillate nearly erect. *Petals* very small, particularly in the pistillate blossoms, erect, linear and obtuse. *Stamens* erect, inserted opposite to and a little below the petals, and about the length of these last; *filaments* much enlarged downwards. *Style* cylindrical, deeply 3-, 4-, or 5-cleft, the segments reflexed, spreading. *Ovary* half inferior, round. *Berries* the size of peas, subdepresso-globose, black and shining, 4- or sometimes 5-celled (*Roth*), with one seed in each cell, often partly abortive. *Seeds* brownish, oblong, pointed at one end; subtrigonus, compressed on the inner side with a sharp ridge, gibbous and obscurely grooved on the outer, the testa dehiscent by a small foramen at the apex. Imperfect and rudimentary organs of each of the two sexes exist in the flowers of staminate and pistillate plants alike.

The common Buckthorn is well adapted for live fences, and makes a thick, durable and handsome hedgerow, though seldom employed in this country, from the preference universally given to Whitethorn as a quickset. Linneus is reported to have been very partial to this shrub, and had it planted in front of his country residence at Hammerby, near Upsal. Two fine staminate bushes stand one on either side of the gate before the venerable farm-house at Yaverland.

The juice of the berries made into a syrup was formerly much in vogue medicinally, but from the violence of its action and the introduction of better remedies is now seldom or never prescribed by regular practitioners. The berries, when gathered quite ripe, in October, stain paper of a fine green (not purple, so far as I have observed), and when prepared with alum furnish the sap-green of painters. The inner bark is of an orange-colour, traversed longitudinally with copious, white, medullary, thready fibres; is said to dye a beautiful yellow, and to be both purgative and emetic.

2. *R. Frangula*, L. *Alder Buckthorn*. *Berry-bearing Alder*. *Vect. Black Alder*. Stem erect unarmed, flowers 5-cleft hermaphrodite, leaves obovato-elliptical or roundish entire glabrous, berry 2-seeded.† *Linn. Sp. Pl.* 280. *Sm. E. Fl.* i. 329. *Br. Fl.* 92. *Bab. Man.* 69. *E. B.* iv. t. 250. *Loud. Arb. Brit.* ii. 537, fig. 209. *Guimp. und Hayne, Abbild. der Deutsch. Holtzart.* i. 24, t. 14 (bona).

In moist woods and copses, swampy thickets, and damp heathy and bushy places; abundantly in the more interior and level districts. *Fl.* May—August. *Fr.* August, September. ½.

E. Med.—Abundant in Stroud Wood, and in several parts of Firestone Copse. In New Copse, between Ryde and Wootton Bridge, frequent. Woods between

* Hence probably is derived one of the Swedish names for this shrub, *Getappel*, i. e. Goat-apple.

† Sometimes 3-seeded, according to M. and K.

Whippingham and Palmer's farm. Near Newchurch, in Bordwood, abundantly. Lake Common. Abundant in some parts of Youngwood's Copse. Apse-heath withy-bed. Alverstton Lynch. About America, and Apse Castle, common. Copse called Beechwood, on the left of the road a little beyond Fernhill going to Newport from Ryde, plentifully. Between Fernhill and Woodhouse. Abundantly in Fattling-Park copse. Briddlesford wood, in great abundance. In Clavell's Copse, by Whippingham street, abundant.

W. Med.—Nunswood or Nunningswood Copse, by Ningwood. Marvel Copse, by Newport.

A slender shrub, from 4 or 5 to 10 or 12 feet high, rarely in cultivation a small tree,* with a dark leaden-gray or purplish black bark, clouded with ash-gray and sprinkled with white, oblong, warty spots; the epidermis of a blood-red internally, the true bark of a bright greenish yellow within. *Stems* mostly numerous, rounded, erect and virgate, sometimes solitary, and from a finger thick to the size of the wrist and upwards; dividing into many irregular, spreading, twiggy, terete branches that are naked below, and bearing leaves only on the young wood of the lateral and terminal shoots, which are reddish and downy. *Leaves* scattered or alternate, or partly opposite, stalked, plane, varying in shape, ovato-obovate- or rotundato-elliptical, pointed or acuminate, a few here and there rounded and obtuse, a little shining, quite entire, or, as remarked by Bertoloni, sometimes minutely subserrulate towards their apex, glabrous, of a light somewhat glaucous green above, paler beneath, with a very prominent midrib and numerous parallel sharp lateral costæ, arcuately anastomosing with each other at the margin of the leaf, depressed on the upper side of the disk, to which, from its peculiar flatness, they impart an artificial appearance, as if cut out with a stamp. *Petioles* terete, subcompressed, somewhat channelled above, finely downy, usually reddish. *Stipules* linear-lanceolate, acuminate, glandulose on the margin, falling away for the most part very early. *Flowers* all hermaphrodite, axillary, fascicled, from about 2—5 together, sometimes solitary, small and inconspicuous. *Peduncles* single-flowered, glabrous, lax, nodding or decurved, shorter than the petioles or about equal to them. *Calyx* glabrous, about 2 lines in length, cleft about half its length into 5 triangular, broad-pointed, nearly erect segments, that are whitish or freckled with brownish red, fleshy, concave behind, gibbous within, ciliate on the margins with a few short filamentous points, with a tuft of the same at their apex. *Petals* very small, white, broadly ovate or ovato-rotundate, deeply emarginate, cucullato-conduplicate, shorter than and inserted betwixt the calyx-segments, opposite to and infolding the anthers as in a hood. *Stamens* very short, erect, inserted on a narrow glandular rim, their *filaments* very broad at base, nearly triangular; *anthers* large, dark violet; *pollen* white. *Style* shorter than the stamens, thick and greenish like the sessile, 2-lobed, glanduloso-pilose stigma. *Berries* the size of peas, black, subdepresso-globose, very juicy, 2- or sometimes, it is said, 3-seeded. *Seeds* large, yellowish, smooth, nearly orbicular, subplano-convex, the *hilum* very large.

The berries, which ripen in August and September, have merely a sweetish aqueous flavour, and yield to water on expression a fine purple colour, which seems confined in the subcutaneous pulpy matter, as the proper juice is only slightly green or nearly colourless. The wood yields by distillation in close vessels a very superior charcoal for making gunpowder, for which purpose, the Rev. G. E. Smith informs me, it is planted in some parts of Kent and Sussex. The leaves droop perpendicularly, and take fine shades of yellow or reddish before they fall.

The caterpillar of the Brimstone Butterfly (*Gonepteryx Rhamni*) feeds indifferently on both our Buckthorns, but I have usually found it on the present and with us more abundant species. The occasional appearance of the perfect insect clearly indicated to me the existence of the Buckthorn long before I was enabled to add it to our island Flora.

* There is an unusually large tree-like specimen in the Glasnevin Botanic Garden at Dublin.

Order XXIII. LEGUMINOSÆ, Juss.

"*Calyx* of 4—5 *sepals*, more or less combined, the fifth segment inferior. *Petals* various, generally 5 and papilionaceous. *Stamens* various, generally 10, monadelphous or diadelphous. *Ovary* 1-celled, bearing the ovules along the upper margin, sometimes stalked. *Style* and *stigma* 1. *Legume* 2-valved, dehiscent or indehiscent. *Seeds* usually without albumen. *Embryo* with the *radicle* straight or recurved upon the *cotyledons*. — Trees, herbs, or shrubs. Leaves *alternate*, mostly *compound* and *pinnated*, with or without *tendrils*, *stipuled*."—Br. Fl.

Tribe I. LOTEÆ.

Stamens monadelphous or diadelphous. *Legume* continuous (not jointed), 1-celled, or by the introflexion of one of the sutures spuriously 2-celled. *Cotyledons* rising above ground and becoming green leaves.

Subtribe I. GENISTEÆ.

Legume 1-celled. *Stamens* mostly monadelphous. *Leaves* simple or trifoliolate, rarely pinnate. *Stems* generally shrubby.

A. Stems woody.

I. ULEX, Linn. Furze.

"*Calyx* 2-lipped, with a small scale or *bractea* on each side at the base; lips nearly entire or upper one 2-toothed, lower 3-toothed. *Legume* turgid, few-seeded, scarcely longer than the *calyx*. *Leaves* simple."—Br. Fl.

1. *U. europæus*,* L. Common or Spring Furze. *Whin* or *Gorse*. *Calyx* somewhat hirsute with slightly spreading hairs the teeth nearly obsolete, bracteas large ovate lax, wings manifestly longer than the keel and imbricated over it. *Br. Fl.* p. 94. *E. B. t.* 742. *Guimp. und Hayne, Abbild. der. Deutsch. Holtzart.* ii. 164, t. 123.

Var. β . Flowers pale yellow.

On heaths, commons and dry barren fields and pastures, also in woods, hedges and waste places, by roadsides, &c.; everywhere most abundantly. *Fl.* April; May, and partially throughout the year.† *Fr.* July. $\frac{1}{2}$.

β . St. Helen's Spit.

* Pliny (apud Hard) makes *Ulex* masculine, Ainsworth, feminine.

† The almost endless succession of flowers on this well-known shrub gave occasion to the proverb, "When furze is out of blossom, kissing's out of season." An

Legume scarcely above half an inch long, and about $2\frac{1}{2}$ lines broad, straight, a little inflated, shaggy with copious, long, hoary, silky pubescence. *Seeds* large, a line or more in length, roundish ovoid, slightly compressed, subcordate at the upper end, which is tipped with a large, fleshy, two-lobed chalaza, their colour olive-green, reddish brown or yellowish, very smooth and polished, a few only in each pod usually perfected.

This species is, I understand, used by the cottagers in Wales as winter food for their cows, which are found by its use at that season to yield as much milk and butter as if fed in fresh pasture. The last year's shoots are collected, and bruised with a wooden mallet in a sort of trough to break the points of the spines, and when so bruised are eaten by the cattle with avidity. A farmer near Haverford West uses the furze for the same purpose, employing a mill turned by water for bruising the fresh shoots.

2. *U. nanus*, T. F. Forst. *Dwarf or Autumn Furze*. Calyx with the pubescence appressed the teeth lanceolate, bracteas minute, wings about the length of the keel. *Br. Fl.* p. 94. *E. B. t.* 743.

In similar places with the last and almost equally common. *Fl.* August—October. *Fr.* April, May. $\frac{1}{2}$.

Legumes quite similar to those of *U. europæus* in form and hairiness, but only about half as large, and about equal to the subtending persistent calyx. *Seeds* rather smaller than in *U. europæus*, otherwise exactly similar, 1, 2, or 3 in each pod usually perfected.

Dr. Bell-Salter has remarked to me that the lower sepal in the calyx of *U. nanus* has almost constantly three minute teeth at the apex, the same part in *U. europæus* showing but two. Though far from being friendly to the excessive multiplication of species from loose, obscure or variable characters, the crying evil of the present botanical age, we cannot help suspecting that the present may really be a distinct species from *U. europæus*, though *U. provincialis*, another assumed species, and stated to be common on the hills around Bristol, is said to be intermediate between the two. The spreading calyx-teeth, minute close-pressed bracteas, smaller flowers with narrower and paler standard, the deflexed spines, humbler growth, and different flowering season are differences that taken conjointly tend greatly to strengthen the above conclusion.

The reference of Smith in 'English Flora' to Gerarde for this plant is erroneous, the figure referred to (*Ger. Em.* 1321, fig. 6) representing I believe *Genista scorpius*.

II. SAROTHAMNUS, Wimm. Broom.

Calyx 2-lipped, without bracteas at its base; upper lip with 2 small teeth, lower one 3-toothed. *Standard* large, broadly ovate. *Keel* very blunt, including the stamens, at length deflexed. *Tube* of the *stamens* split on the upper side. *Style* very long, thickened upwards and spirally curved. *Legume* many-seeded, much longer than the calyx.—Leaves *simple or trifoliate*.

1. *S. scoparius*, Wimm. *Common Broom*. "Branches angled, glabrous, leaves ternate stalked, upper ones simple, leaflets oblong, flowers axillary shortly pedicellate, legumes hairy at the margin."—*Br. Fl.* p. 95. *Spartium*, L.: *E. B. t.* 1339. *Cytisus*, DC.

early, if not quite total suspension of flowering takes place however after Midsummer till the seed-pods are matured, when a succession of blossoms commences afresh, which in diminished numbers continue to deck the branches till the following spring again clothes them in their richest attire.

In dry, hilly, bushy places, woods, thickets, heathy pastures, and on steep banks, mostly on a gravelly or sandy soil; very frequent. *Fl.* April—June. *Fr.* July—September. *h.*

In Sandown Bay a solitary bush with the flowers nearly pure white was observed amongst many others with blossoms of the usual colour.

A bushy shrub, from 3 or 4 to 10 or 12 feet high or even more, with copious, alternate, erect, virgate, green, tough and flexible branches, which appear as if deeply furrowed from the 5 short, salient, decurrent angles. *Stem* and primary branches streaked or furrowed and often of a bright red, the former sometimes as thick as the leg. *Leaves* from the same buds as the flowers, and appearing with the latter or very shortly afterwards, ternate or partly simple, nearly erect; *leaflets* very small, scarcely half an inch long at most, obovate or obovato-elliptical, acute, very nearly sessile, grayish green, and hoary with long silken appressed hairs, most copious on their under side. *Petioles* very flat, variable in length, as long as or often much longer than the leaves, sericeo-tomentose like the latter. *Flowers* solitary or in pairs, erect in bud, lax or drooping when open, 9 or 10 lines in length, bright golden-yellow, usually shaded with orange on the wings and standard, rarely white, mostly tipped in the bud with brownish red. *Pedicels* shorter than the flowers, subcompressed, glabrous, with 2 or 3 minute scales about their middle, lax or drooping, and springing from 3 or 4 small, roundish, obovate or elliptical, simple leaflets, that surround the pedicel and precede the true leaves, which almost immediately succeed the expanding blossoms, and are mostly ternate on longer or shorter petioles, and chiefly produced on the young branches and shoots. *Calyx* glabrous, bell-shaped, a little compressed, usually tinged with reddish brown, about a quarter of an inch long, membranous, a little oblique at the mouth, 2-lipped, the lips widely diverging, rounded, quickly becoming brown, dry and marcescent; upper lip with 2, lower with 3 minute teeth, each lip bearded within at its apex with fine white hairs. *Standard* orbicular, emarginate, semiconduplicate (not spreading or reflexed), of an uniform yellow colour, excepting a faint spot of orange streaked with fulvous-brown a little above the very short, abrupt, narrow claw; *wings* finally lax or drooping, oblong, with short linear claws, as long as the keel; *keel* very obtuse or rounded at its apex, paler yellow than the rest of the flower, its 2 halves but slightly cohering, often a little downy along the suture, at length separated and pendulous, exposing the style and stamens. *Stamens* all united at the base into a tube by cellular tissue, in 2 sets of 3 and 7, latter and inferior set much the longer; *filament* glabrous; *anthers* elliptical, orange-coloured, minutely apiculate. *Style* extremely long, circinate-revolute, semiterete, with a furrow along its flat upper side, slightly enlarged upward just beneath its hooked, glandular, acute apex or *stigma*. *Germen* narrowly elliptical, densely silky, much compressed laterally. *Legume* from about an inch to an inch and a half in length, blackish brown, roughish or subtuberculate, oblong, very flat, fringed with fine white hairs along the sutures; the lower one of which is nearly straight, the upper more or less wavy, with a thickened margin, and terminating in the short hard base of the style above the centre of the apex. *Seeds* from 5 or 6, to 8, 10, or 12, pale olive-brown, roundish or subelliptical, a little compressed, quite smooth, abrupt, notched and foveate at the summit to receive the caruncleoid villose funiculus: *hilum* circular, depressed, downy, with a transverse furrow.

III. GENISTA, Linn. Green-weed.

"*Calyx* 2-lipped; upper lip with two deep segments, entire, lower one with 3 teeth. *Standard* oblong. *Keel* deflexed after flowering. *Legume* flat or turgid, many-seeded.—Leaves *simple* or *trifoliate*."—*Br. Fl.*

1. *G. tinctoria*, L. *Dyer's Green-weed*. *Woad-waxen*. "Unarmed, leaves lanceolate or elliptical nearly glabrous, stipules

minute subulate, branches rounded striated, flowers spicato-racemose, corolla and legumes glabrous."—*Br. Fl.* p. 94. *E. B. t.* 44.

In rough pastures, and dry borders of fields and thickets, in very many places, abundantly. *Fl.* July, August. *Fr.* September. *h.*

E. Med.—Abundant on Ashey common. Pastures between Wootton common and Newport, frequent. In woods and pastures along the shore between Wootton Creek and King's Quay. On the slipped banks along the shore between Ryde and Binstead in one spot plentifully. Field between Quarr Abbey and Ninham. In a meadow on Brading marshes, abundantly.

W. Med.—Very plentiful in many places about Freshwater. Most abundantly in pastures in the vicinity of Newport race-course. Rough clay pasture-ground between W. Cowes and Gurnet Bay, about Egypt, &c., abundantly.

Root woody, very long, tortuous, much-branched, and creeping horizontally in all directions, the bark deep brown, rough and wrinkled. *Stems* numerous, forming a bushy tuft, woody, leafless and depressed at the base, soon emitting many (annual ?) green, slender, angular and striated, leafy branches, which are ascending below, then erect, from about 12—18 inches high, glabrous and usually simple below, more or less alternately branched in the upper part, the branches axillary, short, erect or diverging, and like the main stems quite destitute of spines, more or less beset with fine, downy, scattered hairs. *Leaves* alternate or scattered, on very short almost obsolete flat petioles, a little remote, erect or diverging, flat, dark green, smooth and shining, the lowermost 2—3 lines in breadth, mostly lanceolate or elliptic-lanceolate, acute, glabrous excepting along the margins and midrib beneath, which are fringed with silky hairs. *Stipules* extremely minute, triangular-subulate. *Flowers* solitary, axillary, erect, crowded at the summits of the yearly (?) shoots into lax oblong racemes. *Peduncles* hairy, shorter than the calyx, bearing a pair of subulate bracts above the middle. *Calyx* yellowish green, tubuloso-campanulate, about $\frac{1}{4}$ inch long, slightly hairy, somewhat 2-lipped, the segments about equal in length, ciliated, the 2 upper triangular-subulate, straight, the 3 lower smaller and narrower, mostly connivent, finally decurved, (*Leighton*). *Corolla* bright yellow inclining to orange, about 3 times as long as the calyx, glabrous; *standard* roundish, the margins more or less deflexed, ovate, obtuse and emarginate, with a very short, abrupt, vaulted claw; *wings* elliptical-oblong, very obtuse, nearly the length of the keel, their claws long and narrow; *keel* oblong, very obtuse, thin and flat anteriorly, a little hairy on its inferior edge, its laminae at first cohering, at length separating, and together with the wings deflexed or pendulous; as long as the standard, spurred above their slender claws. *Stamens* ascending, all united (monadelphous) into a glanduloso-pubescent tube; *anthers* large, oblong, yellowish, at length dark purple and linear. *Style* greenish, ascending, glabrous, cylindrical, recurved at the apex; *stigma* flat. *Legumes* spreading or suberect, from about 9 to 15 lines in length, straight or somewhat falcate, strongly compressed, torulose, dark brown or nearly black, shining and glabrous. *Seeds* roundish and subcompressed, usually about 6—9, sometimes more or less, rarely all perfect, olive-brown or greenish, very smooth, shining and glabrous; *hilum* round, with an oblique, tumid, annular border.

2. *G. anglica*, L. *Needle Green-weed*. *Petty Whin*. "Spinous, spines simple none on the flowering branches, leaves ovato-lanceolate, glabrous, stipules obsolete, flowers axillary somewhat racemed, corolla and legumes glabrous."—*Br. Fl.* p. 95. *E. B. t.* 132. *Guimp. und Hayne, Abbild. der Deutsch. Holtzart.* ii. 162, t. 121.

On moist heaths, moors and pastures, also in spongy bogs, not unfrequent. *Fl.* May, June. *Fr.* July. *h.*

E. Med.—Abundant on the moory parts of Munsley Hill, by Godshill. About Rookley farm, and on the deepest and wettest bog near the Wilderness. On a

moory piece of land close to Pagham, called, I believe, Burton Hill. Between Mount Misery and Smallgains Heath, plentiful, *G. Kirkpatrick, Esq.*! Wootton common? *Mr. Lawrence.*

W. Med.—On heathy ground on the N. side of Parkhurst forest. Field by Albany barracks, Newport. Near Cowes. New White-house farm, *Miss G. Kilderbee.* Near Colwell barracks, *B. T. W.*

A humble prickly shrub, of straggling growth. *Root* extremely tough and woody, pale brown externally, much branched and contorted, running far and wide beneath the surface, and ending in numerous long, flexile, diffuse and decumbent or prostrate, woody *stems*, which are rounded, bare and nearly simple below, variously and irregularly branched towards their mostly ascending extremities, the short ultimate divisions of which are spreading, divaricate or curved upwards, uneven and beset with slender, pungent, straight or slightly recurved spines (abortive branches), from $\frac{1}{4}$ to $\frac{1}{2}$ an inch or more in length, wanting on the annual or flowering shoots and on the lower parts of the stem and larger branches. *Leaves* confined entirely to the short lateral and terminal shoots of the current and foregoing year, alternate or scattered, often with a fascicle of smaller leaves in their axils, surrounding a nascent spine, very shortly stalked or almost sessile, the petiole with a few hairs; about $\frac{1}{4}$ of an inch long, dull grayish green, glabrous and somewhat fleshy, flat and spreading, elliptic-lanceolate, acute and apiculate, becoming broader or more ovate as they approach the flowers, at length beneath the latter broadly elliptical or obovate. *Stipules* none. *Flowers* solitary and axillary, about $\frac{1}{2}$ of an inch long. *Pedicels* lax, shorter than the leaves, having about the middle a pair of minute, opposite or alternate, subulate, hairy bracts with tumid gland-like bases. *Calyx* very short, 5-nerved, 2-lipped, fringed along the margins, otherwise glabrous; upper lip shorter than the lower, in 2 deep, elliptic-oblong, diverging segments; lower lip trifid, segments lanceolate, acute or acuminate, slightly sinuate, the sinuses of both lips and their segments acute or very slightly rounded only. *Corolla* of an uniform bright yellow without markings of any kind; *standard* obovato-elliptical, slightly pointed, minutely emarginate, reflexed and revolute, with a very short claw. *Style* long, glabrous, compressed, not channelled, ascending below, then nearly erect, curved. *Legumes* scarcely above $\frac{1}{4}$ an inch in length, yellowish green or brownish, very hard and smooth, oblong, cylindrical and obtuse, tipped with the pungent incurved base of the style. *Seeds* about 10 or 12, pendulous from the superior commissure, small, roundish and dimpled, very smooth, black and shining, seldom all perfected.*

This species possesses perhaps sufficient attractions in its flowers to make it desirable for cultivation, were it not for its straggling unsightly mode of growth, and long, bare, prickly branches, which look as if quite dried up. Indeed, the duration of these is probably limited to three years at furthest, and the root, it is likely, does not survive much longer.

B. *Stems herbaceous.*

IV. ONONIS, Linn. Rest-harrow.

"*Calyx* campanulate, 5-cleft, its segments linear. *Standard* large, striated. *Keel* rostrate. *Legume* turgid, sessile, few-seeded. —Leaves simple or trifoliate."—*Br. Fl.*

1. *O. arvensis*, L. *Common Rest-harrow.* *Cammock.* "Shrubby, branches hairy often spinous, lower leaves ternate, the rest simple oblong or oval serrated except at the base, flowers solitary shortly stalked, calyx much shorter than the corolla, legume

* The seeds are frequently destroyed in the pod by a little beetle peculiar to this species, the *Apion Genistæ*.

erect obliquely rhomboid 2—3 seeded, seeds tuberculated."—*Br. Fl.* p. 96.

α. repens. Prostrate, spinous, and very shaggy and hoary. *O. repens*, *L.*: *E. B. Suppl.* t. 2659.

β. spinosa. "Erect or ascending more glabrous."—*Br. Fl.* p. 96. *E. B.* t. 682.

In barren pastures, by roadsides, the borders of fields and thickets, and on dry sandy banks and cliffs by the sea; abundantly. *Fl.* June—September. 24.

The Rest-harrow is called Cammock in this island, in Sussex, and in other parts of England, where it is reputed to communicate its nauseous goat-like odour to the milk and cheese of cows pastured where it abounds; cheese so tainted is said in these counties to be *camnocky*.

V. ANTHYLLIS, *Linn.* Kidney-vetch.

Calyx inflated, 5-toothed. *Petals* nearly equal in length. *Keel* obtuse or shortly pointed. *Legume* oval, 1—3 seeded, enclosed in the permanent calyx.—Leaves usually pinnate.

1. *A. Vulneraria*, *L.* Common Kidney-vetch or Lady's Fingers. "Herbaceous, leaves pinnate, leaflets unequal, heads of flowers in pairs."—*Br. Fl.* p. 96. *E. B.* t. 104.

β. Leaves fleshy, nearly glabrous, flowers paler. *A. maritima*, *Schweigg. Bluff et Fingerh. Comp. Fl. Germ.* ii. p. 187, No. 1976.

In dry, and especially chalky or limestone pastures, and on grassy slopes, but not very common in this island. *Fl.* May, June. 24.

E. Med.—Plentiful by the pathside along the brow of Cowpit Cliff, between Shanklin and Cook's Castle. About St. Catherine's lighthouse, abundant. Ventnor. Chalky hollow between Niton and Whitwell.

W. Med.—White Pit, Newport; and Lenten Pit, Carisbrooke.

β. Abundant on the steep banks in Sandown bay. Cliffs near the Needles. Between Foreland point and Whitecliff bay. Cliff near St. Catherine's point.

Claws of the *petals* extremely long and slender; *keel* and *wings* cohering strongly. *Style* very long, with a swollen joint at some distance below the *stigma*. *Legume* very small, quite concealed in the white, chaffy, inflated calyx, stipitate on a slender pedicel from the upper suture, blackish, reticulated, nearly semiorbicular, the edges much compressed. *Seed* solitary, large, ovate, greenish, very smooth.

Subtribe 2. TRIFOLIÆ.

Legume 1-celled. *Stamens* diadelphous. *Stems* herbaceous, rarely shrubby. *Leaves* 3—5-foliolate, rarely imparipinnate.

VI. MEDICAGO, *Linn.* Medick.

Calyx with 5 nearly equal teeth. *Keel* obtuse. *Legume* falcate or spirally twisted.—Leaves trifoliolate.

*1. *M. sativa*, *L.* Purple Medick. Lucerne. "Stem usually erect, leaflets obovate-oblong toothed, peduncles many-flowered racemed, pedicels usually shorter than the bractæas, legumes compressed downy twisted 2—3 times in a loose spire."—*Br. Fl.* p. 97. *E. B.* t. 1749.

In meadows and pastures, on dry banks, borders of fields, and by waysides, occasionally; naturalized. *Fl.* June, July. 24.

E. Med.—Abundant in a field close to Bonchurch farm, the remains probably of cultivation; also near the same place by the path leading from thence to the landslip.

W. Med.—Persistent (from cultivation) or naturalized in a grass-field close to Gurnet farm, in great abundance.

2. *M. lupulina*, L. *Black Medick.* *Nonsuch.* “Leaves obovate-cuneate, stipules nearly entire, peduncles many-flowered, spikes dense oval, legumes compressed unarmed kidney-shaped.”—*Br. Fl.* p. 97. *E. B. t.* 971.

In dry waste and cultivated ground, fields, meadows, pastures, and by waysides &c.; abundantly. *Fl.* May—August. ☉.

3. *M. maculata*, Sibth. *Spotted Medick.* *Heart Medick.* “Leaflets obcordate, stipules toothed, peduncles few-flowered, legumes compactly spiral compressed, the spires furrowed at the edge and fringed with a double row of long spreading curved prickles.”—*Br. Fl.* p. 97. *M. polymorpha*, *E. B. t.* 1616.

In meadows, pastures, waste ground, by waysides and on hedgebanks, and sometimes in woods; frequent, especially on a gravelly or calcareous soil. *Fl.* May—August. ☉.

E. Med.—On the Dover, occasionally. Abundant on the shore between Springfield and Nettlestone point. On a piece of waste ground just out of Quarr-abbey farm going up to the Fish-houses, in plenty. St Helen's, on the way to the spit, in great plenty. Just out of Shanklin towards Bonchurch. In vast profusion in a meadow by Beauchamp, near Niton.

W. Med.—Abundant and very luxuriant on sandy banks about Mottistoun church. Frequent about Brixton, Mottistoun, Brook, and elsewhere on the green (?) sand. At W. Cowes. Parapet of Yarmouth castle, Norton, &c., *B. T. W.*

4. *M. denticulata*, Willd. *Reticulated Medick.* Nearly glabrous, leaflets obcordate, stipules laciniated, peduncles few-flowered, legumes broad loosely spiral and flat with 2—3 spires deeply reticulated the margin thin keeled with a double compact row of prickles.

β. vulgaris, Benth. Spines about half the diameter of the pod, divergent, hooked at the extremity. *Benth. E. B.* vol. xxxvii. t. 2634. *G. E. Smith, Pls. of S. Kent. Br. Fl.* p. 98.

On sandy banks and cliffs by the sea; very rare. *Fl.* May, June. *Fr.* June. ☉.

E. Med.—At the foot of the cliff in Sandown bay towards the Culvers, just at the junction of the chalk with the green sandstone, plentifully, but, so far as I have observed it, in one spot only, of a few feet in extent; in greater plenty on the same cliff just below the summit. [On St. Helen's spit, in some plenty, by the old church ruins and along the road; also on the bank at Brading quay, and along the road thence towards the village, sparingly, *A. G. More, Esq.*—Edrs.]

Root tapering, with many whitish fibres. Stems several, prostrate, from a few inches to a foot and upwards in length, quadrangular, glabrous in my specimens. Leaflets inversely heart-shaped, the 2 lateral nearly sessile, the middle one stalked, toothed in their upper half, quite glabrous, the midrib continued into a small point a little curved upwards at the notch. Stipules laciniato-dentate, their segments unequal, linear and acute. Flowers 2—5, on axillary peduncles, small, and much paler than those of *M. maculata*. Sepals awl-shaped, nearly equal in length. Legumes on the elongated peduncles, blackish when ripe, mostly in our Isle-of-Wight specimens of 2½ rather loose spiral convolutions, much compressed laterally, their surface curiously and deeply rugoso-reticulate, crested along their

edges with a double row of more or less spreading or divergent very rigid spines, hooked at their extremities and about half the diameter of the pod in length, the thin sutural margin of the legume running between the two rows. *Seeds* large, yellowish, oblongo-reniform, very smooth, shining and much compressed.

VII. MELILOTUS, Tourn. Melilot.

"*Calyx* 5-toothed; teeth nearly equal. *Petals* distinct, deciduous. *Keel* obtuse. *Legume* 1- or few-seeded, indehiscent, longer than the calyx.—*Flowers* in long racemes. *Leaves* trifoliate."—*Br. Fl.*

1. *M. officinalis*, L. *Common Yellow Melilot*. "*Legumes* 1—2 seeded ovate compressed pointed irregularly veined and rugose, racemes lax, corolla more than twice as long as the calyx, petals all of nearly equal length, stem erect."—*Br. Fl.* p. 98. *Trifolium*, *Sm.*: *E. B.* t. 1840.

In woods, thickets, hedges, borders of fields, and on banks by the sea, in many places abundantly. *Fl.* June—August. *Fr.* August, September. ♂. or ♀. *Sm.* &c.

E. Med.—Between Ryde and Sea View. Abundant on the shore near the Priory, and in a wood below St. Helen's. In Inwards Copse, near Ashey. Steep banks facing the sea South of Lucombe chine, in plenty. In vast profusion in Bloodstone Copse, 1845, actually covering the ground in some parts so as wholly to conceal it from view, appearing to have sprung up in consequence of the recent clearing of the copse, as I had not previously remarked it there, and of the vast assemblage of plants scarcely one could be found in blossom, August 24th, a pretty clear proof of its being biennial or perennial, not annual, as given by some authors. Between Truckles and Hardingshoot. Woods between Lucombe and Shanklin, in profusion, *Dr. Martin*!

W. Med.—Near Hampstead farm in various places. Abundantly on the banks of slipped clay between W. Cowes and Gurnet bay, between Egypt House and the old limekiln on the shore.

Legumes drooping or pendulous, about 2 to 3 lines in length, brownish or black, attenuated or substipitate within the far shorter calyx, ovate more or less inclining to ovate-orbicular or subrhomboidal, somewhat inflated, coarsely, prominently and reticulately rugose, sprinkled with fine appressed but sparsely scattered hairs, margins thin and flat, partially dehiscent along the very compressed upper suture, which terminates obliquely and anteriorly in the rather long straight or recurved base of the style. *Seeds* 2 or often 1 by abortion, pale greenish, reddish or brownish yellow, subcompressed, glabrous, truncate and obliquely cordate at top by a deep notch, in the centre of which is a circular depression surrounding the slightly oval hilum.

I have remarked the blossoms of this plant to be very attractive to bees.

† 2. *M. vulgaris*, Willd. *White Melilot*. "*Legumes* 1—2 seeded ovate obtuse mucronate reticulato-rugose, racemes lax, corolla twice as long as the calyx, keel and wings shorter than the standard, stem erect."—*Br. Fl.* p. 98. *M. leucantha*, *Koch*, *E. B. Suppl.* t. 2689. *Fl. Dan.* x. t. 1705. *Bab. Man. of Brit. Bot.* p. 75.

In waste ground and cultivated fields, amongst corn, clover or lucerne; also (but not in this island) on banks by the sea; rare, and apparently introduced. *Fl.* July—September. ♂.

E. Med.—A specimen or two amongst clover at the back of a wood called Heath, facing Roughborough farm, between Ryde and Brading. A few specimens

in a sandy cornfield by Tinker's Hole and nearly opposite Cliff farm. At Ventnor, Dr. Martin.

W. Med.—Clover-fallow near Kingston, and a specimen or two in the same situation near Luccombe.

I confess this appears to me a very slight variety only of the common yellow Melilot, differing merely in the colour and rather smaller size of the flowers.

VIII. APORANTHUS, Nob.* Bird's-foot Trefoil.

1. *A. Trifolium*, Nob. *Bird's-foot Trefoil*. "Peduncles about 3-flowered, legumes compressed about 8-seeded nearly twice as long as the calyx, leaflets obcordate toothed at the extremity; stems decumbent." *Trigonella ornithopodioides*, DC. *Br. Fl.* p. 99. *Trifolium*, L.: *E. B.* t. 1047. *Curt. Fl. Lond.* i. fasc. 2, t. 53.

On dry, short, gravelly or sandy pastures and banks; apparently rare, but probably only from escaping notice by its diminutive size. *Fl.* May, June. ☉.

E. Med.—On the spit below St. Helen's. On the short turf above the beach between Sandown and the fort abundantly, as also by the descent to the King's Head Inn from the high road on the North side. On the Dover, Ryde, shown me there by Mr. Wm. Jolliffe. [On the shore of the harbour at Bembridge, near the bathing-house of Bembridge Lodge, A. G. More, Esq., Edrs.]

A minute plant, very different in structure from the following genus, often growing in small caespitose patches, and liable where *Trifolium subterraneum* abounds to be overlooked for a dwarf state of that plant. *Root* whitish, simple, tapering and fibrous, beset, as is frequent in plants of this natural order, with little fleshy excrescences. *Stems* a few inches long at most, numerous, prostrate, rounded, simple or branched, scarred, hollow in the centre, leafy and glabrous, in all my specimens sending out simple fleshy fibres beneath for some distance from the root which strike into the earth. *Leaves* on long footstalks that are flattened but scarcely channelled above, of 3 very small, inversely heart-shaped or obovate, shortly stalked *leaflets*, with sharp, distant, mucronate, denticulate serratures, entire near the base, quite glabrous, with straight parallel veins and a very thick prominent midrib at the back. *Stipules* at the base of the petioles, sheathing the peduncles and amplexicaul, ovato-lanceolate, membranous, with long, taper, ribbed and very acute points. *Peduncles* axillary, solitary, compressed, 1-, 2-, or 3-flowered, various in length, usually much shorter than the leaves. *Pedicels* very short, a little hairy, with a minute, white, unequally toothed, sheath-like bract at the base of each. *Flowers* small, flesh-coloured or nearly white. *Calyx* slender, tubular, slightly hairy, 10-ribbed, the teeth long, linear-lanceolate, equidistant, with very slender acute points, dark green, with a single rib and pale edges, the 4 superior equal in length, the lowermost a very little shorter; all a little curved upwards. *Corolla* narrow, nearly double the length of the calyx, closely conduplicate, striated, without a distinct claw; *wings* and *keel* abruptly narrowed into very long, extremely slender, uncombined claws. *Legumes* oblong, very obtuse, a little compressed and curved, slightly hairy, tipped with the style, considerably exceeding the closely investing permanent calyx, and widely dehiscent

* [It is much to be regretted that the lamented author had not drawn up a description of his newly constituted genus *Aporanthus*. For convenience we quote from the 'British Flora' of Hooker and Arnott the characters of *Trigonella*, to which genus the author's species is referred by them, as well as by DeCandolle. —Edrs.]

"*TRIGONELLA*, Linn. *Calyx* 5-toothed; teeth nearly equal. *Petals* distinct; *keel* obtuse. *Ovary* many-seeded. *Legume* straight or slightly curved, many-seeded, much longer than the calyx, 2-valved.—Flowers in few or many-flowered heads, or short racemes. *Leaves trifoliate*."—*Br. Fl.*

for the greater part of their length. *Seeds* usually 8, pale yellowish green spotted with black, roundish and angular by compression, very smooth and shining.

IX. TRIFOLIUM, Linn. Trefoil.

"*Calyx* 5-toothed; teeth unequal. *Wings* united by their claws to the obtuse *keel*, persistent. *Legume* 1—4 seeded, indehiscent, about as long as the calyx by which it is enclosed.—*Flowers capitate*. Leaves *trifoliate*."—*Br. Fl.*

A. *Flowers white or purple.*

a. Heads many-flowered, compact, roundish or oblong. Calyx not inflated after flowering.

* *Legume more than 2-seeded.*

1. *T. repens*, L. *Creeping Trefoil*. *White or Dutch Clover*. "Heads umbellate globose, legumes with 4 seeds, calyx-teeth unequal, leaflets obcordate serrulate, stems creeping."—*Br. Fl.* p. 99. *E. B.* t. 1769.

In fields, meadows, pastures, waste places, and by roadsides, universally. *Fl.* May—September. 24.

** *Legume 1- or 2-seeded.*

2. *T. pratense*, L. *Common Purple Trefoil*. *Red Clover*. *Honeysuckle Trefoil*. *Vect. Broad Clover*, *Cow-grass*. "Heads dense ovate sessile, calyx hairy, its teeth setaceous ciliated, lower one longer than the rest half longer than the tube of the corolla, stipules ovate bristle-pointed, leaflets oval or obcordate, stems ascending."—*Br. Fl.* p. 100. *E. B.* t. 1770.

In similar places with the foregoing, and equally abundant. *Fl.* May—September. 24. or ♂.?

3. *T. medium*, L. *Zigzag Trefoil*. "Heads lax subglobose stalked solitary terminal, calyx glabrous, the teeth setaceous hairy, lower one longer than the rest about equal to the tube of the corolla, stipules lanceolate acuminate, leaflets elliptical, stems branched zigzag."—*Br. Fl.* p. 100. *E. B.* t. 190. *Fl. Dan.* viii. t. 1273 (bona).

In dry, elevated, hilly pastures on a calcareous soil, or on gravelly ones with a clay bottom; rare? *Fl.* June—September. 24.

E. Med.—Very fine and abundant in Firestone Copse at the junction of the roads to Ninham and Haven-street, *Dr. Bell-Salter*. Pasture-field on Vinnicombe hill, by Newchurch, *Mr. Loe*. [In the hedge on the North side of the road leading from Ashy toll-gate near Ryde to Gatehouse, abundantly the whole way;—on the bank on the South side of the road between Guildford and Lynn, sparingly,—also near Ashy down on the cross-road to Haven-steet, *Dr. Bell-Salter*.—Edrs.]

W. Med.—On slipped land along the shore at the Limekiln Cliff, W. Cowes, *Miss G. Kilderbee*!

4. *T. arvense*, L. *Hare's-foot Trefoil*. "Heads very hairy soft cylindrical terminal stalked, calyx-teeth longer than the

corolla permanently setaceous at length somewhat spreading, stipules ovate-acuminate, leaflets lanceolate obtuse, stems erect much branched."—*Br. Fl.* p. 101. *E. B.* t. 944.

In dry, barren, sandy fields and pastures, on banks and waste ground by the sea; frequent. *Fl.* June—August. ☉.

E. Med.—On the Dover, Ryde. Plentiful and very luxuriant at the foot of the cliffs in Sandown bay, on the debris of the green sandstone. On St. Helen's spit.

Root tough, tapering, with several long slender fibres running far into the sandy ground. *Stems* round, numerous, erect or ascending, sometimes procumbent, clothed like the rest of the plant with copious gray pubescence. *Leaves* on short stalks, of 3 narrow, obovato-lanceolate, sessile leaflets, abrupt or truncate at the tip, with a minute point and a few obscure serratures. *Stipules* small, strongly ribbed with green or purple, with long spreading points. *Heads of flowers* terminal, cylindrical, very obtuse, grayish white with a bluish tinge, extremely soft, scarcely an inch long. *Calyx* minute, the tube ovate, 10-ribbed, and like the long, flexible, spreading, setaceous teeth covered with fine white hairs. *Corolla* much shorter than the calyx-teeth, very small, cream-coloured, ovate, incumbent, the sides deflexed, with a long, broad, curved claw. *Legumes* very minute, yellowish, membranous and wrinkled, nearly orbicular, tipped with the style. *Seed* solitary, filling the pod, greenish yellow, nearly globular, smooth.

5. *T. striatum*, L. *Soft Knotted Trefoil*. Downy, heads of flowers terminal and axillary ovate subsolitary sessile, calyx prominently 10-ribbed in seed ventricose, its teeth subulate nearly erect rigid, leaflets obcordate subdenticulate at the summit with numerous close not prominent veins running straight to the margin. *Br. Fl.* p. 101. *E. B.* t. 1843.

In dry sandy or chalky fields, pastures and waste places, but not common. *Fl.* May, June. ☉.

E. Med.—On the Dover, Ryde. [On St. Helen's spit and in Sandown bay, *A. G. More, Esq.*, Edrs.]

Whole herb downy with copious, long, simple, spreading hairs. *Root* tough, whitish and tapering, scarcely branched but mostly emitting many slender tubercular fibres. *Stems* numerous, much branched from the base or nearly simple, round, solid, purplish above, a little rigid, 3 inches and upwards in length, usually procumbent or prostrate, rarely in a variety mentioned by Mr. Leighton (*Fl. of Shrops.* p. 363) erect or ascending, for the most part spreading in a circular form. *Leaves* distant, alternate, inferior on long, the superior on much shorter half-rounded petioles grooved above, the uppermost leaf subtending the terminal flower-heads, very shortly stalked; leaflets silky, grayish green, on very short stalks, or very nearly sessile; those of the lower leaves obcordato-obovate or even rotundato-obovate; of the upper obovate or obovate-elliptical, cuneate at the base and pointed, at other times shaped like the inferior leaflets; all, as Sir W. Hooker remarks, nearly entire, being only obscurely sinuato-denticulate along their upper margins, the veins, as Koch observes, of equal thickness throughout, very numerous, close, not prominent, and running in nearly straight lines to their marginal termination. *Stipules* large, membranaceous, ribbed, ovate or oblong, adnate to the petiole and amplexicaul, with subulate sometimes leafy points, those beneath the flower-heads very broad and concave. *Heads* many-flowered, axillary and terminal, solitary or in pairs (the second smaller and placed laterally), sessile, ovate or roundish ovate, often (at least in seed) subconical. *Flowers* small, erect, quite sessile and ebracteate. *Calyx* tubular, somewhat elliptical, a little gibbous in front, much swollen or ventricose in seed, prominently 10-ribbed, the ribs red or greenish, when in fruit forming very broad convex ridges with deep intermediate furrows; teeth erect, lanceolato-triangular, scarcely half the length of the tube, green or purplish, single-ribbed, rigid and unequal, the 3 lowermost rather

longer than the 2 upper, all subulato-acuminate, with spine-like tips, not at all spreading or reflexed in seed, the mouth of the calyx contracted and thickened internally into a sort of hairy ring. *Corolla* longer than the calyx, pale rose-coloured without striæ, sometimes nearly white, much narrowed and elongated backwards; *wings* and *keel* equal. *Legume* enclosed in the whitish or brownish ventricose calyx, very thin and chaffy, subglobose, tipped with the deflexed not straight style. *Seed* solitary, oval or ovato-rotundate, brownish yellow, slightly rugose and quite glabrous.

The specific name refers to the strongly ribbed or striated calyx. The figure of this species in 'English Botany' has the leaflets drawn too distinctly serrated.

6. *T. scabrum*, L. *Rough Rigid Trefoil*. Heads of flowers terminal and axillary sessile ovate, calyx tubuloso-campanulate in seed, its teeth unequal triangular lanceolate very rigid 1-nerved at length patent, leaflets obcordate serrulate their veins very prominent upwards and curving towards their marginal termination rather distant, stems procumbent. *Br. Fl.* p. 102. *E. B. t.* 903.

In similar places, and often in company with the last; perhaps rather more frequently observable. *Fl.* May—July. ☉.

E. Med.—On the Dover, Ryde, in tolerable plenty. On dry pasture-ground at E. Cowes, along the shore below Statwood. By the Rope-walk, E. Cowes, *Miss G. Kilderbee*. On St. Helen's spit.

W. Med.—Down by Freshwater, first noticed by Mr. D. Turner, *Mr. D. Snooke*. In Thorness bay, *Rev. W. H. Coleman*. Abundantly at Norton, on the turf nearly opposite Mrs. Mitchell's and Sir Graham Hamond's.

Legume extremely minute, shorter even than the tube of the very much hardened calyx, and which consequently retains it more firmly than in *T. striatum*; very thin and membranous, tipped with the style, filled with the solitary, oblong, somewhat compressed, bright yellow and very smooth *seed*, which is scarcely half as broad or thick as in *T. striatum*.

Smith and Curtis (*Fl. Lond.*) describe the calyx-teeth as recurved in seed, and the latter quotes Vaillant's excellent figure (*Bot. Par. t. 33, fig. 1*), but both that and Curtis's own plate represent them as little more than spreading or patent, certainly not, as Koch declares, bent back like a bow (in einem Bogen abstehehend). In all my fine and numerous fresh specimens the calyx-teeth are mostly patent, or at farthest somewhat spreading, never decidedly recurved, though the *points* only of a few teeth here and there are slightly bent backwards.

This and the preceding species have a great general resemblance to each other, and their characters, as laid down in our standard British works, scarcely enable the young botanist to distinguish them with certainty. I have for this reason altered the specific definition of Smith and Hooker, and inserted the excellent characters of Koch (in Röhlings's 'Deutschland's Flora'), taken chiefly from the mode of nervation in the leaves. The following differences are observable in the two species:—*T. striatum* and *T. scabrum* are both rigid, especially in seed, but the former is always more stiff and wiry in its stems than the latter; the heads of flowers and the whole plant smaller and more slender. When in fruit the calyx is perhaps equally rigid in both, but the much broader triangular-lanceolate teeth of *T. scabrum*, whose tubular campanulate calyx is also coloured, will serve to distinguish it in that state from the pale, bleached, ventricose calyx of *T. striatum*, the teeth of which, though equally erect, are very narrow or subulate, with few finer and more slender points. The character of Koch, taken from the size and direction of the veins on the leaflets, is excellent, and will help to distinguish the two plants at any period of growth.

7. *T. glomeratum*, L. *Smooth Round-headed Trefoil*. Heads terminal and axillary sessile globose, calyx-teeth ovate very acute

leafy veiny at length reflexed, leaflets obcordate toothed, stipules ovate much acuminate, stems procumbent. *Br. Fl.* p. 102. *E. B. t.* 1063.

In dry, short, gravelly, sandy or heathy pastures, and on waste sandy ground by the sea; rare. *Fl.* May, June. ☉.

E. Med.—On the Dover, Ryde, sparingly. On an earthen bank in Sandown bay, near the turning off to Brading and Ryde, 1848. A few small but perfect specimens on a bank by the sea, between Sandown and the fort, Sandown bay, *Dr. Martin !!!* [On St. Helen's spit abundantly, *Dr. Bell-Salter*, Edrs.]

W. Med.—At Freshwater Gate.

Root annual, whitish, tapering and fibrous. *Stems* several, quite prostrate, irregularly though not much branched, round, solid, smooth, whitish or purplish, usually spreading in a circular form, from 3 or 4 to 6 or 8 inches in length. *Leaves* bright green with a pale spot in the centre of each leaflet, quite glabrous like the whole plant; *leaflets* small, very shortly stalked, with numerous straight parallel veins, roundly obovate, edged with purple, minutely sharply and unequally denticulato-serrulate, lowermost serratures larger and more distant, the base of the leaflets entire. *Petioles* of variable length, semiterete, canaliculate above. *Stipules* sheathing, coloured, ribbed, roundish or oblong, with subulate sometimes reflexed points. *Flowers* minute, light pink or purplish, in small, dense, axillary and terminal sessile heads or clusters, of a globular form and about the size of peas. *Bracts* solitary under each flower, small, white, scariose and pointed. *Calyx* sessile, campanulate, with 10 purplish prominent ribs, and 5 green, short, ovato-triangular teeth, which are 3-nerved, very acutely pointed and spreading, though finally reflexed and rigid. *Corolla* longer than the calyx, the *standard* very flatly conduplicate, curved upwards and acute, without claws, not striated except when beginning to wither, when it becomes very evidently streaked, nearly or quite concealing the very minute whitish *keel* and *wings*. *Legume* about as long as the tube of the calyx, roundish, compressed, very thin and membranous, tipped with the long persistent style, bursting along its upper suture and rupturing irregularly besides. *Seeds* 2, very often but 1 by abortion, very globular, pale yellow, often greenish.

The perfect smoothness of the whole plant, with the smaller much rounder heads of flowers, are all sufficient distinctions between this species and *T. striatum*.

8. *T. suffocatum*, L. *Suffocated Trefoil*. "Heads sessile roundish, petals shorter than the membranaceous faintly striated calyx whose teeth are broadly subulate falcate recurved."—*Br. Fl.* p. 102. *E. B. t.* 1049.

In loose sandy waste or pasture-ground along the sea-shore, but rarely. *Fl.* May—July. ☉.

E. Med.—On the Dover, Ryde, *Rev. G. E. Smith !!!* and where I have since picked it myself. Red Cliff, just the spot on which the new lighthouse (St. Catherine's) is erected, *George Kirkpatrick, Esq.* [In great abundance on St. Helen's spit, especially in the less worn parts of the road, *A. G. More, Esq.*, Edrs.]

Root whitish, tapering, branched and fibrous, sometimes with a few granulations. *Stems* numerous, prostrate, simple or slightly branched at the base, mostly spreading in a circular form, and half buried in the sand, from about 1 to 3 or 4 inches in length, round, smooth, solid, leafy and glabrous, as is the whole plant. *Leaves* bright green, alternate, on very long, slender, semiterete petioles that are flattened or very slightly grooved above, sometimes nearly 3 inches in length; *leaflets* very shortly stalked (the 2 lateral almost sessile), obcordate or obovate, distantly and sharply denticulato-serrate in their upper half, the serratures spinulose, wedge-shaped and quite entire in their lower half, somewhat shining beneath, with few, distant, filiform, not at all prominent ribs running direct to the marginal points. *Stipules* broad, scariose, not coloured, with long, subulate, green points, ribless except 3 strong green nerves beneath (the centre one continued into the

petiole, of which the stipules seem a mere expansion) and a single lateral rib running up into the points. *Flowers* crowded in small, roundish, axillary, sessile heads that usually appear densely aggregated towards the base of the stems. *Calyx* sessile, tubular, cylindrical, a little compressed and sometimes curved, faintly ribbed or striate, clothed (at least in my specimens) with a few long scattered hairs; the teeth very long and acute, lanceolate, somewhat falcate, green, with a pale central rib and whitish almost winged margins from their sudden dilation below the subulate points; nearly equal, the 2 upper teeth rather broadest, more or less spreading and recurved, very much so in seed, when they become considerably rigid and the calyx-ribs become very apparent. *Corolla* very minute, scarious and nearly colourless, slightly greenish only, according to Smith rose-coloured, a little longer than the calyx-tube but much shorter than its teeth; *standard* ovate, closely conduplicate, scarcely striate except when withered. *Style* long, slender, tapering. *Legume* very minute, enclosed in the now ventricose and gibbous calyx, short, broad, whitish and membranous, compressed, with thick marginal sutures, glabrous, mostly with a deep notch between the seeds, beaked with the ascending triangular base of the style about the middle of its very obtuse anterior extremity. *Seeds* 2, greenish or brownish yellow, nearly globular, or by the prominence of the radicle slightly reniform, glabrous and somewhat uneven with a few warty granulations.

I have observed the style changed occasionally into a small leaf, from excessive humidity.

The very long petioles, lateral, dense, scarcely orbicular heads of flowers, more distantly serrated leaflets, entire in their lower half, readily distinguish this species from its congeners.

b. *Heads few-flowered, at length producing thick stellate fibres (abortive calyces) from their centre, which ultimately fold over the fruit.*

9. *T. subterraneum*, L. *Subterraneous Trefoil*. "Heads lateral stalked hairy of few flowers, at length deflexed and throwing out from their centre thick fibres palmated at the extremity (abortive calyces) which are closely bent down over the reflexed fruit." —*Br. Fl.* p. 100. *E. B. t.* 1048. *Röhling's Deutschl. Fl.* v. band. s. 274.

On the short turf of sandy or gravelly pastures, heaths and commons; by no means unfrequent. *Fl.* May, June. ☉.

E. Med.—Sandy ground at Langbridge, by Newchurch. Profusely in the chamomile pit at the turning off of the road to the fort from that to Brading, in Sandown village. On the Dover, Ryde, near the ditches. Royal Heath and Sandown bay, plentifully. Between Ryde and Sea View. Near Steephill. Castle Point, Puckaster. Luccombe Chine. [St. Helen's spit, plentifully, *Dr. Bell-Salter*, Edrs.]

W. Med.—Near W. Cowes.

Root small, annual, whitish and tapering, emitting long, slender, branched fibres. *Stems* several or numerous, simple or alternately branched, stout, rigid, lying quite flat on the ground and spreading in all directions, so as to form with the leaves a close short turf, round, naked and scarred below with the marks of the earlier leafstalks, very downy above with soft, white, spreading hairs, and usually suffused with purplish red. *Leaves* alternate; *leaflets* nearly sessile, rotundato-obcordate, bright green above, sometimes marked with a black spot in the centre and a whitish transverse band or cloud, from about 3 to 6 lines in length and about the same width, clothed on both sides with copious, white, silky, diverging hairs, minutely crenulate and denticulate along the superior margin, quite entire on their lower edges, which are somewhat rounded rather than cuneate at base, the apex with a broad shallow emargination, the disk traversed by numerous parallel pellucid veins, branched and anastomosing towards their extremities, and running

straight into the edge of the leaflet without any marginal connecting vein. *Petioles* spreading or diverging, very hairy, semiterete, slightly channelled above, the lower ones usually much the longest (in the larger plants 2, 3 or 4 inches in length) mostly flexuose or curved in various degrees and directions. *Stipules* very large, erect, broadly ovate, acute or shortly acuminate, entire, submembranaceous, more or less hairy without, glabrous within, strongly ribbed and stained with purple below, green at top, connate and clasping at base, and adnate with the petiole for a considerable distance upwards. *Flowers* of two kinds, terminating the peduncles, the inner and central one abortive, assuming during the blossoming of the perfect ones the appearance of a green, conical, bud-like protuberance, seated on the axis of the peduncle and surrounded by the perfect flowers, which then conceal it from view. As the perfect flowers advance to maturity and begin to go off, the above bud-like protuberance enlarges, and expands into a head of several, stellately spreading, partly deflexed, white, fleshy, tapering processes (abortive calyces), by which the calyces of the perfect flowers are strongly bent towards the earth. These fleshy processes finally emit from their apices 5 spreading points like stars (rudimentary calyx-teeth). Perfect flowers in small, terminal, subumbellate clusters, of from 2 to 5 in each, erect or parallel as regards their position with each other, finally spreading, but appearing horizontal or ascending, from the decumbent direction of their curved and very hairy common *peduncle*, which is usually about as long as the cluster it bears. *Calyx* nearly sessile, slender, about 3 lines in length, the limb whitish, tubular, cylindrical, scarcely inflated, glabrous, without ribs, the summit very oblique, and terminating in 5 slender, subulate, green, hairy teeth, of nearly equal length, the 3 lowermost scarcely exceeding the 2 uppermost, which are separated by a very deep broad and rounded sinus from each other; all 5 at first erect, finally spreading or recurved, about equal in length to the tube of the calyx. *Corolla* about twice the length of the calyx, narrow, quite glabrous, white or cream-coloured with a tinge of green on the claws of the petals, which are very long and narrow, and cohere together into a tube somewhat exceeding the calyx-teeth; *standard* strongly conduplicate and incumbent on the keel and wings, slightly ascending, oblongo-obovate, entire or slightly emarginate, striated with distant parallel purple lines,* sometimes suffused with a very faint tinge of rose-red all over; *wings* shorter than the standard but longer than the keel, parallel, oblongo-obovate, entire, concave, with an obtuse sac-like spur or projection above the very narrow and slender claw for the reception of the keel; *keel* shorter than the wings, greenish white, obovate, concave, slightly pointed and cohering together, quite enclosing the stamens and style. *Stamens* in 2 sets, the tube of the larger set open its whole length; *filaments* flattened, somewhat dilated into an oblong shape at summit, especially the lowermost one, and bearing the anther on a minute apiculus. *Style* about the length of the longer stamens, glabrous, ascending at the end, subcapitate.

Conspicuous in the early part of the summer, from its long white flowers covering the turf in patches.

c. *Heads many-flowered, compact. Calyx remarkably inflated after flowering, and arched above.*

10. *T. fragiferum*, L. *Strawberry-headed Trefoil*. "Heads with a multifid involucre as long as the calyx at the base globose upon long axillary stalks, calyx after flowering inflated membranaceous reticulated downy with the 2 upper teeth bent down, stem creeping, leaflets obcordate serrated."—*Br. Fl.* p. 103. *E. B. t.* 1050.

* Koch in Röhling's *Deutschl. Fl.* says bright rose-red, but I have never seen such a variety here. The corolla when fading assumes a red colour, which may have given origin to the assertion.

In rather moist meadows and pastures ; common. *Fl.* June—August. 24.
Abundant about Ryde, Freshwater, &c.

B. *Flowers yellow.*

11. *T. procumbens*, L. *Hop Trefoil*. Vect. *Yellow Clover*.
“Heads broadly oval many-flowered dense, pedicels much shorter than the calyx, standard at length deflexed furrowed, leaves stalked, leaflets obcordate, central one on a longer stalk.”—*Br. Fl.* p. 103. *E. B.* t. 945.

In fields, meadows and pastures, and in dry waste sandy or gravelly places, by roadsides, &c. ; abundantly. *Fl.* May—August. ☉.

This plant is not unfrequently cultivated in this island as the Yellow Clover, but being annual is not so valuable as the more common white or purple kinds.

12. *T. minus*, Sm. *Lesser Yellow Trefoil*. “Heads of 8—15 close flowers on rigid peduncles, pedicels rarely half the length of the tube of the calyx, upper calyx-teeth about $\frac{1}{3}$ of the length of the lower, standard truncate obscurely furrowed much broader than and quite covering the mature legume, lower leaf-stalks much longer than the stipules, leaflets obcordate central one on a longer stalk, stems decumbent hairy.”—*Br. Fl.* p. 103. *E. B.* t. 1256. *W. Wilson in Phytol.* No. 15, p. 293.

In dry barren places, fields, pastures, waste ground, and by roadsides ; frequent. *Fl.* June, July. ☉.

13. *T. filiforme*, L. *Slender Yellow Trefoil*. “Heads on capillary peduncles of 2—5 lax racemed flowers, pedicels longer than the tube of the calyx, upper calycine teeth half the length of the lower ones, standard even deeply notched as narrow as and not covering the ripe legume, leaf-stalks scarcely the length of the stipules, leaflets obcordate equally stalked, stem glabrous.”—*Br. Fl.* p. 104. *E. B.* t. 1257. *T. micranthum*, Viv.

In similar places with the last, from which it is perhaps not really distinct. *Fl.* June, July. ☉.

T. incarnatum (Scarlet Trefoil or Clover) occurs here and there, the remains of previous cultivation.

X. *Lotus*, Linn. Bird's-foot Trefoil.

“Calyx 5-toothed ; teeth nearly equal. Keel ascending, much acuminate. Legume cylindrical, somewhat spongy within, and imperfectly many-celled.—Flowers umbellate : peduncles bearing a leaf at their apex. Leaves trifoliate.”—*Br. Fl.*

1. *L. corniculatus*, L. *Common Bird's-foot Trefoil*. “Heads depressed umbellate 5—10 flowered, peduncles very long, calyx-teeth of the flower-bud straight, the two upper ones always converging, claw of the standard obovate and inflated above, stems decumbent.— α . *vulgaris* ; leaves obovate nearly glabrous.”—*Br. Fl.* *L. corniculatus*, L. : *E. B.* t. 2090.

β . Clothed with fine spreading silky hairs. β . *villosus*, *Br. Fl.* p. 104. *L. villosus*, Thuill.

γ. tenuis. "Leaflets narrow lanceolate, or linear-obovate." *γ. tenuifolius*, *Br. Fl.* *L. tenuis*, *Kit. : E. B. Suppl.* t. 2615.

On open grassy places, pastures, heaths and borders of fields; everywhere plentiful. *Fl.* June—August. 24.

β. Wood between Yarmouth and Thorley. Plentiful in Thorness Wood, Quarr Copse, &c.

γ. Gravel-pit near Great Thorness farm. About Cowes in several places, *Miss G. Kilderbee !!* Between Ryde and Brading, on the road beyond Whitefield Wood, *W. Borrer, Esq.* [Plentiful in all the clayey fallow-fields about Bembridge, *A. G. More, Esq.* Near Wootton, on the new road from Wootton bridge to Hill-side, covering a great part of the road, *Dr. Bell-Salter. — Edrs.*] A state of this var. occurs by the roadside between Thorley and Wilmingham farm, with the leaves extremely narrow and acute, somewhat rigid and of a glaucous aspect, and covered on both sides with short, scattered, close-pressed hairs, the peduncles mostly 2—4, rarely 5-flowered.

Mr. Borrer is much inclined to consider the var. *γ.* as really distinct from *L. corniculatus*, and tells me that in his garden it appears to be either annual or biennial, as he could never preserve it for more than a year or two, after which time the original plant disappeared to be succeeded by fresh ones from seed.

2. *L. major*, Scop. *Narrow-leaved Bird's-foot Trefoil.* Heads depressed umbellate 8—12 flowered, peduncles very long, calycine teeth subulate from an angular base always spreading, the two upper ones diverging, claw of the standard linear, leaflets obovate, stems nearly erect tubular."—*Br. Fl.* p. 104. *E. B. t.* 2091.

In low moist meadows and wet bushy places, on ditch-banks, and by the sides of streams, &c.; very common. *Fl.* July, August. 24.

Subtribe III. ASTRAGALEÆ.

"*Legume spuriously and longitudinally 1- or 2-celled by the introflexion of one of the sutures. Stamens diadelphous (9 and 1). Stems herbaceous or somewhat shrubby. Leaves pinnate.*"—*Br. Fl.*

XI. ASTRAGALUS, Linn. Milk Vetch.

"*Keel obtuse. Legume 2-celled (more or less perfectly); cells formed by the inflexed margins of the lower suture.*"—*Br. Fl.*

1. *A. glycyphyllos*, L. *Sweet Milk Vetch. Wild Liquorice.* "Stem prostrate, spikes ovate, leaves longer than the peduncles, leaflets oval, stipules ovate-lanceolate free, legumes somewhat triangular linear curved sessile erect glabrous."—*Br. Fl.* p. 106. *E. B. t.* 203.

On dry bushy banks, in woods, thickets and open gravelly or chalky pastures and border of fields, mostly in hilly situations; rare. *Fl.* June—September. 24.

E. Med.—Abundantly on a bushy bank below Little Buddle, about midway between St. Catherine's and Old Castle points, *G. Kirkpatrick, Esq.* In great profusion amongst furze and brake in a rough rocky close near the orchard (Sir Willoughby Gordon's) by Niton. Plentiful amongst the rocks and in pasture-ground at Mount Cleve, by Niton, *Miss Kirkpatrick !!!* (I find it all along the bottom of the cliff from the back of the Sandrock Hotel to Westcliff House).

Root tough, woody. Stems scarcely branched, trailing or reclining amongst brushwood often to the length of 3 or 4 feet or even more, roundish, zigzag, smooth, with a white central pith. Leaves alternate, 3—7 inches long, imparipinnate, of 5 or 6 pairs of large ovate or elliptical, entire, smooth, nearly sessile

leaflets, of a dull green in the older plants, grayish beneath, obtuse, with a minute mucro, slightly hairy at the edges and on their reticulated under surface. *Stipules* ovato-lanceolate, pointed, with an occasional tooth or two. *Peduncles* axillary, erect, shorter than the leaves, furrowed and glabrous. *Flowers* about $\frac{1}{2}$ an inch long, in short ovate or subcapitate racemes, erect, of a pale dingy greenish yellow with sometimes a slight tinge of red, on very abbreviated hairy pedicels, which have each a linear ciliated bract at its base, shorter than the calyx. *Calyx* gibbous above at the back, its teeth subulate, the 2 upper ones short, distant, a little converging, the 3 lower much longer, straight, slightly ciliated at the base and along the very obtuse sinuses. *Standard* oblong, veined with green, closely incumbent upon and almost concealing the very obtuse *keel* and *wings*. *Stamens* united into a tube cleft its whole length above. *Style* smooth, compressed, tapering from the somewhat hairy ovary without any visible articulation to a point, on which is the small, glandular, oblique *stigma*. *Legumes* clustered, erect, brownish and membranous, an inch or rather more in length, curved and tipped with the style, reticulated, glabrous or at least only sprinkled over with extremely short, minute, distant hairs, slightly villous on their inner surface, with a deep groove along their under side from the inflexion of their sutural margins. *Seeds* small, reniform, pale greenish yellow, in 2 rows, one along each margin of the dehiscing upper suture, and separated from the other row by the inflexed portion of the lower and indehiscent suture, which reaches to the superior commissure but is unattached to it, thus dividing the cavity into two imperfectly closed cells.

The foliage of this plant, which gives out a most unpleasant smell in drying, and possesses a sweet taste like liquorice, followed by an unpleasant bitterness, great resembles that of the Locust-tree (*Robinia Pseud-acacia*), commonly but absurdly called *Acacia* in this country, and when growing in plantations, amongst long grass, might be overlooked for young stems of that beautiful and valuable native of America.

A. hypoglottis, L.—The following stations have been given for this species:—Carisbrooke-castle hill, Mr. Griffith in *Bot. Guide*.* Dover spit, in plenty, B. T. W.

Tribe II. VICIÆ.

Stamens diadelphous. *Legume* continuous. *Cotyledons* thick, farinaceous, not rising above ground. *Leaves* abruptly pinnate, their common petiole ending in a tendril or bristle.

XII. VICIA, Linn. Vetch. Tare.

“*Style* filiform, with its upper part hairy all round, or with a tuft of hair beneath the *stigma*.—*Leaves* usually with tendrils.”—*Br. Fl.*

* *Peduncles* elongated, many-flowered.

1. *V. sylvatica*, L. *Wood Vetch*. “*Peduncles* many-flowered longer than the leaves, leaflets elliptic-oblong mucronate, stipules lunate deeply toothed at their base, tendrils branched.”—*Br. Fl.* p. 111. *E. B.* t. 79.

* [The following observation is published by our lamented author in the ‘*Phytologist*,’ vol. iii. p. 280 :—“*Astragalus hypoglottis*, recorded in ‘*Botanist’s Guide*’ as found on Carisbrook-castle hill, by Mr. Griffiths, p. 469, certainly does not grow there at present, and I question if it ever did. Mr. Griffiths seems to have been a most inaccurate observer, as I shall have occasion to show subsequently, and to have committed strange mistakes in his reports of species.”—*Edrs.*]

In elevated woods and thickets; very rare. *Fl.* June—September. *Fr.* September, October. 2l.

E. Med.—Plentiful in a copse (Luccombe copse) on the road between Shanklin and Bonchurch, about midway between the two places, where it has been known for many years to certain persons in the island, though I am ignorant who discovered it there. Mr. Curtis's specimens were gathered by him in the late Mr. Vine's grounds at Puckaster, but where the old gardener, Stephen White, assured me it had been introduced from the neighbourhood of Luccombe, the only plant of it he showed me being trained to a wooden prop or pillar in the garden. Mr. Curtis tells me it was abundant some years ago overhanging the road at the entrance of Bonchurch, but the recent unhappy improvements on the natural beauties of the Undercliff have quite effected its extirpation. Northlands Copse, by Yaverland?

Stems numerous, several feet in length, branched, deeply furrowed and quite glabrous, climbing amongst the brushwood by means of its long, slender, compound tendrils. *Leaves* of many opposite or alternate, ovate, obtuse, slightly stalked, smooth, bright green *leaflets*, sometimes notched at the extremity, where the midrib terminates in a minute point or mucro directed downwards; *tendrils* much branched. *Racemes* pedunculated, longer than the leaves from the base of which they originate, many-flowered. *Flowers* very elegant. *Calyx* campanulate, with slender subulate teeth, the lowermost or middle one much the longest, the 2 upper ones with erect or slightly recurved tips. *Corolla* white, the *standard* exquisitely pencilled with blue or purple reticulations, the obtuse *keel* tipped with a mixture of the same colour with umber; sometimes the purple tint is suffused over the entire standard, as in part of my Isle-of-Wight specimens, in which the pencilling is rather a rich lilac than the pale blue colouring given to the plant in *E. B.* *Style* cylindrical, not at all dilated upwards, clothed all round below the *stigma* with spreading hairs, to nearly $\frac{1}{2}$ its length. *Legume* not above an inch long by about $2\frac{1}{2}$ lines wide, glabrous, blackish brown, wrinkled and roughish with raised points, tipped with the permanent style. *Seeds* 4, globose, sometimes with a dimple or depression on each side, olive-coloured, smooth, one or two abortive; *hilum* very large, embracing more than half the circumference of the seed, from which when ripe the placenta separates like a hoop.

2. *V. Cracca*, L. *Tufted Vetch*. "Peduncles many-flowered longer than the leaves, flowers imbricated, leaflets lanceolate slightly hairy with tendrils, stipules half arrow-shaped nearly entire."—*Br. Fl.* p. 110. *E. B.* t. 1168.

Extremely common in woods, thickets, hedges and moist bushy places, sometimes in meadows and the dry borders of fields. *Fl.* July. *Fr.* August, September. 2l.

Legumes drooping, 9—12 lines in length, pale fawn-coloured, dappled, streaked and clouded with brownish black, oblong, subcompressed, glabrous or very slightly pubescent. *Seeds* few, 4 or 5 (mostly 1 or 2 by abortion), globose, mottled dull black and greenish yellow; *hilum* linear, above $\frac{1}{3}$ the circumference of the seed.

** *Peduncles short, few-flowered.*

3. *V. sepium*, L. *Bush Vetch*. "Racemes 4—6 flowered nearly sessile, calyx-teeth unequal, legumes upright glabrous, leaflets 4—8 pairs ovate obtuse gradually smaller upwards upon the petiole."—*Br. Fl.* p. 109. *E. B.* t. 1515.

In woods, groves, thickets, hedges and moist bushy places; very commonly. *Fl.* April—June. *Fr.* July, August. 2l.

*** *Flowers axillary, solitary or in pairs, nearly sessile.*

4. *V. sativa*, L. *Common or cultivated Vetch*. Flowers 1—2 axillary nearly sessile, leaflets 6—10 lower ones retuse or obcordate upper ones often narrower or linear, stipules toothed with a more or less evident spot, calyx-teeth lanceolate-subulate, standard glabrous, legumes linear pubescent or rarely glabrous, seeds globose smooth. *α. sativa*; upper leaflets elliptic-oblong, flowers usually in pairs, pods erect. *E. B. t.* 334. *β. angustifolia*; upper leaflets narrower, flowers usually solitary, pods spreading. *V. angustifolia*, *Roth: E. B. Suppl. t.* 2614. *V. Bobartii*, *Forst.: E. B. Suppl. t.* 2708. *Br. Fl.* p. 109.

In dry gravelly or sandy pastures, waste and cultivated ground, on banks, along hedges, roadsides, and in woods and bushy places. *Fl.* May, June. ☉. (or ♂. *Hook.*)

E. Med.—Abundant in Sandown bay, on the débris at the foot of the cliffs, which it adorns with its rich purple flowers, varying occasionally to bluish or white. Of very diminutive size on the dry sandy turf of St. Helen's spit, &c., where it is likely to be mistaken for *V. lathyroides*, a species apparently of great rarity with us. Along the Brading road from Ryde beyond Whitefield Wood.

β. On a bank at Ventnor. On the short pasture-ground at St. Helen's spit, sparingly.

Legumes a little silky or (when old) nearly glabrous, reticulated, more or less erect or spreading, brownish black, linear, subcylindrical, with narrow keel-like sutures, slightly bent like the long *f*, curved upwards at the extremity into a sharp hard and reflexed point. *Seeds* from about 8 to 10 or 12, globose or obsoletely angular, mottled or clouded grayish and brown with blackish spots, quite smooth and glabrous; *hilum* linear, about $\frac{1}{4}$ the circumference of the seed in length.

Our Ventnor specimens are certainly the *V. angustifolia* of Hooker's *Br. Flora*, who very properly unites the plant figured by him in 'English Botany,' t. 2614, with the *V. Bobartii* of Forster, represented at t. 2708 of the same work, under one denomination, and considers them with equal justice merely as varieties of *V. sativa*. Our examples agree well with Smith's description of *V. angustifolia* in the last ed. of his *Engl. Flora*, and with Sir W. Hooker's figure just referred to, excepting that the leaflets of our specimens are more obtuse. We find the uppermost flowers occasionally in pairs, as there represented, *all the rest* solitary: we cannot therefore understand the propriety of Mr. Forster's correction of the specific character of *V. angustifolia*, when, referring to the very plate which shows the flowers solitary, he adds, "*Flowers in pairs, nearly sessile.*" Mr. Forster expresses a doubt of his own *V. Bobartii* being a good species in *Lin. Trans.* xvi., and we have just seen that the only mark to distinguish it from *V. angustifolia* is very variable.

I have found about Ryde a *Vicia* having solitary flowers, yet with a dark impressed spot on the stipules, and all the other characters of *V. sativa*.

5. *V. lathyroides*, L. *Spring Vetch*. "Flowers sessile solitary, leaflets 2—6 lower ones retuse, stipules entire not impressed with a spot, calyx-teeth subulate, standard glabrous, legumes linear glabrous, seeds nearly cubical tubercled."—*Br. Fl.* p. 108. *E. B. t.* 30.

On dry sandy or gravelly banks and pastures, perhaps not rare, though appearing so from its small size and resemblance to the last. *Fl.* April—June. ☉.

E. Med.—Banks in Sandown bay, *Dr. Martin*, 1839!!!

Root annual, branched, whitish, small, slender and fibrous, having usually

attached to it a few fleshy tubercles. *Stems* several, branched, straggling, ascending or procumbent, from about 2 or 3 to 8 or 10 inches long, slightly hairy, acutely quadrangular, with the 2 opposite angles very prominent or almost winged. *Lower leaves* mostly with 1, upper with 2 or 3 (rarely 5, Koch) pairs of leaflets, their common petioles ending in a simple *tendril*, which in the lowermost leaves is reduced to a straight point, in the higher moderately long and curling; *leaflets* nearly sessile, finely downy on both sides, those of the lowermost leaves cuneate, obovate or obcordate, retuse, apiculate; of the *superior leaves* elliptical, obtuse or truncate, mucronulate (sometimes linear and pointed, Koch). *Stipules* small, semisagittate, acute. *Flowers* axillary (always I believe) solitary, though Koch states they are sometimes in pairs, very shortly stalked so as to appear sessile, far smaller even in the most luxuriant state of the plant than in *V. sativa* (about $\frac{1}{4}$ of an inch long), bluish purple. *Calyx* not at all gibbous at the base, hairy, the segments nearly equal, subulate, fringed. *Standard* ovato-orbicular, purplish pink or lilac, veined, emarginate, with a small apiculus, sharply keeled at the back, with a deep corresponding fold in front; *wings* coloured like the standard, converging, nearly obovate, with an acute curved spur and pale slender claws; *keel* minute, almost helmet-shaped from the extremely rounded, obtuse and gibbous or inflated, violet-coloured apex of its two 2 petals, which cohere closely to the end of their long pale claws. *Stamens* subdiadelphous, the 10th or uppermost free about half its length; *filaments* very short, thick, pellucid; *anthers* roundish. *Style* very thick, obliquely truncate in front, where it is bearded with a marginal row of stiff erect hairs, otherwise glabrous; *stigma* flat, peltate, fringed with glands. *Legume* brownish black, sublinear, 8 to 10 lines in length, compressed, glabrous without, silky pubescent within, acuminate, the apex recurved. *Seeds* about 7 to 10, greenish or yellowish, thickly dotted with flat, warty, blackish points; nearly cubical, with rounded angles, most conspicuously so when ripe; *hilum* at one of the corners, small, oval.

My specimens from Royal Heath, in this island, are extremely hairy, and agree in this respect with beautiful specimens from Bungay, given me by Mr. D. Stock. Others collected by me at Weybridge, Surrey, are comparatively smooth. The very small flowers will distinguish this plant from starved forms of *V. sativa* when not in seed, though the present may approach that species in size of leaf and length of stem.

**** *Peduncles elongated, few-flowered. Style equally pubescent all round. Calyx equal at the base. Annual plants. Ervum.*

6. *V. hirsuta*, Koch. *Hairy Tare*. "Leaflets 6—8 pairs linear-oblong truncated, peduncles 1—6 flowered, legumes oblong 2-seeded hairy." — *Br. Fl.* p. 111. *Ervum*, *L.*: *E. B.* t. 970. *Vicia Mitchelli*, *Raf. Ell. Sk.* ii. p. 224.

β. Peduncles 1—2 flowered, legumes glabrous.

In woods, hedges and waste places; frequent; a still more common and often troublesome weed in cornfields and other cultivated ground. *Fl.* May—August.

⊙.

β. Amongst the rocks at East End, sparingly, 1843. Isle of Wight, *W. Borrer, Esq.*, in *Bab. Man. of Br. Bot.* p. 78.

7. *V. tetrasperma*, Mœnch. *Smooth Tare*. "Peduncles 2-flowered, legumes glabrous 4-seeded, leaflets linear-oblong obtuse." — *Br. Fl.* p. 111. *Ervum*, *L.*: *E. B.* t. 1223.

In woods, thickets, hedges, borders of fields, and in waste and cultivated places, cornfields, &c.; very commonly. *Fl.* June—August. ⊙.

Herb of a pale grayish green. *Root* whitish, slender, of a few branching often tuberculate fibres. *Stems* 1 or more, slender, weak, and leaning on neighbouring plants for support, and clasping with its tendrils but not twining; from about 1

to 2 or 3 feet in length, more or less copiously branched or nearly simple, acutely and ancipitally quadrangular rather than winged, hairy, at other times nearly or quite glabrous. *Leaves* short, of from 3 to 5 pairs of opposite or partly alternate leaflets, the common petiole produced into a *tendril*, which is most commonly branched, but sometimes even on the same individual simple; *leaflets* nearly sessile, hairy or glabrous, spreading in various degrees, often in the superior leaves either wholly or partially erect, most usually linear-elliptical and obtuse but not truncate, their summits rounded with a short mucronate acumination, at other times the leaflets are acute, at least of the upper leaves, the lower retaining their obtuseness of termination. *Stipules* small, narrow, semisagittate or lanceolate, very acute. *Peduncles* solitary, axillary, very slender or filiform, erect, 1—2 flowered, mostly shorter than the leaves (including their terminal tendril) or about as long, ending in a very small inconspicuous point, sometimes wanting. *Flowers* very small, about 3 lines in length, on still shorter, slightly drooping or decurved pedicels. *Calyx* not half the length of the corolla, tubuloso-campanulate, scarcely if at all gibbous on the upper side of its basal extremity, obscurely 9-ribbed, unequally 5-toothed, the 2 superior teeth very obtuse, with a deep rounded sinus between them, broader and shorter than the rest, with ascending points; the 3 lowermost teeth equal, triangular-lanceolate, straight. *Standard* pale blue or purplish streaked with blue, bluntly emarginate, not much spreading; *keel* compressed, white tipped with blue, the apex obtuse; *wings* whitish. *Style* long, straight, erect, hairy all round for some distance beneath the simple obsoletely capitate *stigma*. *Legume* brown or yellowish, about $\frac{1}{2}$ an inch in length, subelliptical oblong, obtuse or abrupt, a little compressed and torulose, quite smooth and glabrous, tipped with the style, which appears to originate from a point somewhat nearer the middle of the extremity of the pod than in *E. gracile*, from the greater degree of flexure of the upper suture than in that species, though its real point of insertion is the same in both; bursting along the lower suture. *Seeds* 4 or 5 (sometimes but 1 or 2 or even entirely wanting, as I find mostly the case in specimens from Quarr Copse), spherical, dull brown, sometimes greenish, plain or mottled, smooth and glabrous (slightly rough, *Bab.*) *Hilum* long, extending nearly $\frac{1}{2}$ the circumference of the seed.

This species, which is so frequent and injurious in cornfields and cultivated land in England, is extremely rare in Scotland and Ireland, and very uncommon in Switzerland.

8. *V. gracilis*, Lois. *Slender Tare*. "Peduncles 1—4 flowered aristate at length twice as long as the leaf, upper leaflets 3—4 pairs linear acute, stipules semi-hastate, teeth of the calyx longer than the tube, legumes linear glabrous 6-seeded."—*Koch*. *E. B. Suppl.* t. 2904. *Lois. Fl. Gall.* ii. p. 148, t. 12 (opt.) *Ervum longifolium*, *Ten. Lej. Fl. de Spa*, ii. 108. *Vicia laxiflora*, *Brot. Phytogr. Lusit. Select.* tab. 52, p. 125. *Ervum varium*, *Brot. Fl. Lusit.* *E. polyspermum*, *Smith in herb. ejus*; *Koch in Röhl. Deutschl. Fl.* v. 1er Th. s. 161. *E. gracile*, *Sebast. et Mau. Fl. Rom. Prod.* p. 248, No. 881. *V. tetrasperma* β., *Br. Fl.* p. 111.

In waste and cultivated ground, on lay or fallow fields, and amongst corn, more rarely in woods, thickets and hedgerows; frequent, though less so than either of the two last species. *Fl.* June—August. ☉.

E. Med.—First observed by me in 1838, in great abundance, amongst corn in a field near Coppid Hall, and since in cornfields about Cowes. Very abundantly in and about the borders of fields near Howgate farm, and between Foreland point and the Culvers, for the most part with unusually large flowers, 3 or 4 times the size of those of *E. tetraspermum*. I have also seen specimens from the *Rev. G. E. Smith* gathered in Binstead stone-pits, and it seems indeed to be not uncommon about Ryde and elsewhere, as Thorley &c.

W. Med.—Cornfields near W. Cowes. [Near Brighstone, *A. G. More, Esq., Edrs.*]

V. gracilis is distinguished from the preceding species (*V. tetrasperma*) by its larger size and somewhat glaucous hue; by its flowers, twice the size of the former, and of which the standard is an uniform lilac or rose-colour, scarcely streaked with darker lines as in that; by the much longer, sharply acuminate and narrower leaflets, which seldom exceed 3 pair, and stand erect on the petiole; by the much longer peduncles, especially the upper ones, which considerably exceed the leaves in length, and are from 1- to 6- or 7-flowered; and by the legume, which has rarely fewer than 6 seeds. It differs moreover in always having simple tendrils, whilst those of *V. tetrasperma* are commonly though not invariably branched, and by the frequent termination of the peduncle in a straight awn-like point (abortive flower?), also observed occasionally in *V. tetrasperma*. The most marked of these distinctions are the greater size of the plant and its flowers, the singularly erect leaflets, more numerous seeds, and very long peduncles, and these are so constantly united as to justify its re-establishment as a species, although the opinions of very able botanists are opposed to this. The remaining characters are certainly more variable, and are exhibited in gradation by either plant; but I would ask, may not the intermediate forms be hybrid productions, as the two plants are very commonly found together? But our *V. gracilis* is more a plant of cornfields and waste ground than of woods and hedgerows, and where we first observed it did not stray from the corn, amongst which it was growing abundantly, to mix with the ordinary *V. tetrasperma*, which occupied in as great profusion the grassy borders of the same field.

Brotero says of our *V. gracilis*, "semina in germine 5 ad 7, fertilia 3, 4, 5, rarissime 6," but his plate shows only 4 seeds in the pod; in this island they are usually 6, less frequently only 5, smaller than those of *V. tetrasperma*, globular, dark reddish brown obscurely mottled with black, the hilum very short, scarcely longer than broad, on which rather slender character Koch lays great stress, retaining it as a species in his new edition of Röhlings's 'Deutschland's Flora.' In *V. tetrasperma* the hilum is always much elongated compared with its breadth. Specimens perfectly agreeing with ours are in the Smithian herbarium from Gibraltar and Tangier, which the possessor at that time appears from a pencil note to have thought a new species, and called *E. polyspermum*. In the same herbarium is a specimen intermediate between our *V. gracilis* and the ordinary *V. tetrasperma* gathered by Mr. Woodward many years ago in Cambridgeshire, and noticed in *E. B.*; but this I have given reasons for supposing may be a hybrid, and am strongly disposed to consider our *V. gracilis* to be a good species, an opinion in which I am glad to find my friend the Rev. G. E. Smith coincide, who on first seeing the plant was forcibly struck by its aspect and characters.* It appears to be not uncommon in the S. and middle of Europe, about Paris, on the Rhine, in the Netherlands and Portugal, where Brotero says it affords a grateful food to cattle, and hence might perhaps be advantageously grown as a green crop in our own country.

XIII. LATHYRUS, Linn.

"Calyx with its mouth oblique, its upper segments shortest. Style plane, broader upwards, downy on the upper side.—Leaves with tendrils, or the petiole without leaflets."—*Br. Fl.*

* [In the 'Phytologist' (iii. 281) we find from Dr. Bromfield's pen the following remark:—"I am still more than half inclined to regard it (*V. gracilis*) as a mere variety of the last (*V. tetrasperma*), finding most of its characters prone to variation, but in deference to the opinions of others I here keep it distinct." It is believed that this latter remark was penned at a later date than the text above.—*Edrs.*]

* *Peduncles 2- or more flowered. Petioles furnished with perfect leaflets. Root perennial.*

1. *L. pratensis*, L. *Meadow Vetchling*. "Peduncles 2—8 flowered, tendrils with 2 lanceolate 3-nerved leaflets, stipules arrow-shaped as large as the leaflets, calyx-teeth subulate, stem acutely angled without wings."—*Br. Fl.* p. 112. *E. B. t.* 670.

In moist meadows and pastures, damp thickets, hedges and bushy places; very common. *Fl.* July, August. *Fr.* August, September. 24.

Legumes suberect, dark brown or nearly black, rather more than an inch long by about 3 lines in breadth, straight, much compressed, prominently veined and glabrous, the valves silky within, undulately torulose or puckered beneath the upper suture. *Seeds*,—seldom more than 2 or 3 perfected, rather large, subovato-rotundate, yellowish gray mottled with purple, smooth and shining. *Hilum* linear-elliptical, about $\frac{1}{2}$ the circumference of the seed.

2. *L. sylvestris*, L. *Narrow-leaved Everlasting Pea*. Peduncles 4—5 flowered, tendrils with a pair of sword-shaped leaflets, calyx-teeth triangular-subulate, stem winged. *Br. Fl.* p. 112. *E. B. t.* 805.

In woods, groves, thickets, hedges, and on broken, rocky, bushy ground; not general, and principally along the East and South-east coast of the island. *Fl.* July—September. 24.

E. Med.—In Luccombe chine, and in great profusion all over the landslip at East End, covering the rocks in many places. Edge of the cliff a little before descending by the pathway from Sandown into Shanklin chine, with leaflets so broad that I took it for *L. latifolius*, the introduction of which into our island Flora has, I fear, originated in a similar mistake on the part of others. Amongst willows near the late Mr. Vine's cottage at Puckaster copse, near Yaverland farm. Knighton East copse. About Puckaster, mostly with very narrow leaflets. In great quantity under the cliff at Shanklin and Luccombe, *Mr. J. Woods, jun.*, in *Bot. Guide*!!! A plant or two observed in the high wood in Appuldurcombe park, 1845.

Herb quite glabrous. *Stems* climbing over bushes and rocks to the length of many feet, hollow, branched, acutely quadrangular, broadly winged along the same two opposite angles throughout. *Tendrils* stout, 3-branched, bearing each a single pair of erect, sessile, entire, bright green leaflets, 3 or 4 inches long, swollen and jointed on the common petiole, and having 3 principal and very prominent ribs: the upper leaflets usually narrow, linear-lanceolate or sword-shaped, those lower on the stem often ovato-lanceolate, and so broad as often to cause our plant to be mistaken for *L. latifolius*. *Peduncles* solitary, axillary, erect and angular, several inches long, 4—12 flowered. *Stipules* semisagittate, their segments linear, very acute. *Flowers* on short pedicels, $\frac{3}{4}$ of an inch broad, rather showy. *Bracts* subulate, the length of the pedicels. *Standard* pale purplish pink, with darker reticulations; *wings* violet or purplish blue; *keel* whitish, with green ribs, and slightly tinged above with blue and red. *Legume* pale brown, $2\frac{1}{2}$ inches long, glabrous, covered with a prominent network of veins, and tipped with the persistent style. *Seeds* blackish, with grayish sinuous markings, more or less globular, flattened and dimpled, from 1 to 6 perfect, the rest abortive. *Hilum* very narrow, not at all depressed, embracing $\frac{1}{2}$ of the circumference of the seed.

L. latifolius, L.—A plant said to be this species has been found in the following places:—Sandown Beach, *Pulteney* in *Bot. Guide*. Near Carisbrooke Castle, 1830, *Dr. Bell-Salter*! but I should fear scarcely wild. Specimens gathered here appeared to me identical with those of Mr. Smith, but the flowers of the former seem much inferior in size to those of the common state of the plant, so

called, in gardens. In a wild spot by Cove cottage, Ventnor, *Rev. G. E. Smith*, who sent me specimens in 1839, but from which both flowers and pods had fallen away; some doubt therefore attaches to the specific identity of the plant, which I confess is one I do not properly understand, and am inclined to consider it a variety of the preceding.

3. *L. maritimus*, Big. *Sea-side Everlasting Pea*. "Peduncles many-flowered shorter than the leaves, tendrils with 3—4 pairs of oval leaflets, stipules as large as the leaflets unequally cordato-hastate with the angles acute, stem angled without wings."—*Br. Fl.* p. 113. *Pisum*, *L.*: *E. B.* t. 1046.

On the pebbly sea-beach; very rare, and now, I fear, quite extinct in the island. *Fl.* July, August. 24.

E. Med.—Sandown beach, *I. W.*, *Pulteney* in *Bot. Guide*, and *Miss Lucas*. "On the sands near Lord Seymour's (Norris Castle), near Cowes," — *Marryatt, Esq.*, in *Baxter's Gen. of Flowering Pls.*, and in *litt.*

I have hitherto failed in finding this plant, but my friend *Miss Lucas* has specimens gathered by her at the Sandown station some years ago; it was then rather plentiful, but has probably been overwhelmed by some subsequent landslip, or washed away by the encroaching waves,—casualties to which botanical rarities are but too liable on all parts of our island coasts.*

4. *L. hirsutus*, *L.* *Rough-podded Vetchling*. "Peduncles 2-flowered, each tendril with a pair of linear-lanceolate leaflets, legumes hairy, seeds tubercular, stem and petiole winged."—*Br. Fl.* p. 112. *E. B.* t. 1255.

In cultivated fields; very rare. *Fl.* June, July. ? ☉.

A single specimen in the herbarium of *Miss Lovell*, who picked it in a field near Brighstone, but could not succeed in finding a second. Perhaps introduced accidentally!

** *Peduncles* 1- or 2-flowered. *Petioles* leafless, either forming tendrils or dilated into a leaf-like expansion of its substance (phyllodium), and without tendrils. *Root* annual.

5. *L. Nissolia*, *L.* *Crimson Vetchling*. *Grass Vetch*. "Leaflets wanting but in place of them a simple linear-lanceolate sessile leaf-like petiole without tendrils, stipules minute subulate."—*Br. Fl.* p. 112. *E. B.* t. 112.

In grassy thickets and bushy places, along the banks and borders of fields, on lay and fallow ground; by no means rare, but very uncertain in its time and places of appearing. *Fl.* May—July, and sometimes in September. *Fr.* August. ☉.

E. Med.—Roadside between Ryde and Brading, at the foot of the hill beyond the third milestone. Shore between St. Helen's mill and Carpenters. Borders of fields by Howgate farm near Bembridge, and in great abundance and very fine in several fields and hedges near the sea between Foreland point and the Culvers. Top of the cliff above Sandown bay, abundant, and on the banks below. Between Nettleston green and St. Helen's church, *Lady Hooker*. Between Niton and Blackgang, by the lower road, *Dr. Martin*. At Bembridge, near the windmill, *Dr. Bell-Salter*. At Springfield, opposite Vernon Villa. Priory landslips, near St. Helen's old church, 1850, *Dr. Bell-Salter*. Puckaster cove, *J. Curtis, Esq.*, *Brit. Entom.* x. t. 445.

* A specimen of what appeared to them to be the leaves of this plant was found in June, 1843, by *Dr. Martin* and *J. A. Hankey, Esq.*, in Sandown bay.

W. Med.—About Thorley, as by the roadside going to Freshwater, and in hedges by Bouldner, *Rev. J. Penfold* and *Mr. Rob. Gibbs*. Meadow between Woodhouse and Little Town, near Briddlesford, *Miss S. Sanders*! Between Debborn turnpike and Gurnet farm, near a brook, *Miss G. Kilderbee*! Near Sea View and W. Cowes, *Miss Lucas*.

Root annual, small, whitish, with a few long fibres bearing small, roundish, fleshy tubercles. *Stems* erect, branching from the base, simple above, from 12 or 18 inches to 2 feet high or even more, hollow, angular, leafy, quite glabrous. *Leaves* alternate, erect, linear, very much like those of some grass in shape and colour, 4 or 5 inches long, hardly $\frac{1}{4}$ inch wide, about 7-ribbed, smooth and quite entire, with a pair of very minute awl-shaped stipules at their base. *Peduncles* solitary, axillary, 1- or 2-flowered, long, smooth, slender, erect, shorter than the leaf. *Flowers* on very short slightly hairy pedicels, with or without a minute bract at their jointed insertion on the peduncle, about the size of those of the common Vetch (*Vicia sativa*), wings and standard bright crimson fading at last into dull blue, the keel whitish. *Calyx* shining, nearly glabrous, the teeth only clothed and fringed with a few scattered white hairs, strongly 5-ribbed, the lower segments nearly equal in length, the 2 upper somewhat shorter, all lanceolate and very acute. *Standard* orbicular, erect. *Style* much flattened, transversely obtuse, pilose on its inner side about half way down, faintly keeled in front. *Legumes* pale nut-brown, pendulous, very narrow, from about $2\frac{1}{4}$ to $2\frac{1}{2}$ inches long, and about $\frac{1}{4}$ inch wide, subcylindrical, nearly straight, prominently veined or wrinkled lengthwise, glabrous, obliquely mucronato-acuminate, the point recurved. *Seeds* from 10 or 12 to 16 or 17, globose or slightly cylindrical, gray or reddish mottled with black, bluntly tuberculate, glabrous; *hilum* oblong or ovate, short.

This plant is impatient of cultivation, and does not always succeed in the garden. The flowers, which are of short duration, lose much of their native brilliancy, as they soon do altogether after being gathered. I have remarked them of a brick-red in Kew Botanic Gardens. Dr. Bell-Salter observes that this species is not strictly annual, as the root often survives the winter, and is furnished with hybernacula. He further remarks that the perfect seed-pods are formed in buds which do not open, and thinks that the plant is more common than is usually supposed, but for want of favourable circumstances for its perfect development is often passed by, from its resemblance to the grass amongst which it grows. A moist or even wet season Dr. Bell-Salter thinks best suits it.

XIV. OROBUS, Linn. Bitter-vetch.

"*Calyx* obtuse at the base, oblique at the mouth, its upper segments deeper and shorter. *Style* linear, downy above.—*Leaves* pinnate, without tendrils."—*Br. Fl.*

A small genus, with the habit of the two preceding genera, but of more humble growth, not climbing, and destitute of tendrils; flowers mostly purplish, appearing early; root usually bearing tubers. With the exception of the following, the species are very rare in Britain.

1. *O. tuberosus*, L. *Tuberous-rooted Bitter-vetch*. Leaflets 2—4 pairs glaucous beneath, stipules half arrow-shaped toothed at the base, stem simple erect winged. *E. B. t.* 1153.

β . Leaflets linear. *O. tenuifolius*, Roth. *Hook. Br. Fl.* p. 114. *Vide* Sibbald, Scot. Illust.

In woods, thickets, groves, and on bushy heaths and commons; very frequent. *Fl.* April—June. *Fr.* July, August. 24.

E. Med.—In Quarr copse, Apley wood, and other places about Ryde, commonly. Abundant in woods between Wootton and Whippingham. In Briddlesford copse, plentiful, where I have found it with extremely narrow (linear-lanceolate) leaflets, and with all gradations between that and the broadest form. Plentiful in Bordwood copse.

W. Med.—In Mrs. Goodwin's grounds at W. Cowes.

β. A specimen found in Bordwood copse, April, 1843.

Root consisting of one or more irregular knots or fleshy tubers, of a blackish brown externally, from the size of a pea to that of a hazel-nut or larger, emitting long creeping fibres that bear at intervals other smaller tubers. *Stems* several, their lowermost part creeping under ground or rhizomatous, white, round and fleshy; that above ground rising from about 6 to 12 or 15 inches high, weak, inclining or suberect, simple or slightly branched, acutely quadrangular, 2 of the angles sharply winged and twisted or oblique, glabrous or slightly pubescent, pale green with a glaucous bloom. *Leaves* mostly about 3 or 4 on the superior half of the stem, alternate, with 2, 3, or 4 pairs of mucronate sessile leaflets that stand more or less erect and often folded, quite glabrous, of a dull grayish green above, whitish or glaucous beneath, with 3—5 slender parallel ribs, about 1 or 2 inches in length, very variable in breadth, mostly lanceolate and acute, sometimes elliptical and obtuse, occasionally very narrow and even linear, their common petiole broad, concave above, and terminating in a weak straight and flat awn-like process, not $\frac{1}{2}$ an inch in length, instead of a tendril. *Stipules* large, semisagittate, acute, usually more or less toothed or crenate about the middle and base, varying in breadth, with the leaflets from ovate-lanceolate to linear-lanceolate. *Peduncles* axillary and terminal, longer than the leaves, winged and angled like the stem, erect, from 3- or 4- to 6- or 7-flowered. *Flowers* on lax pedicels, which are shorter than the calyx, about $\frac{1}{2}$ an inch long, of a pretty uniform rose-red on first expanding, but subsequently assuming variously intermixed shades and pencilling of purple, bright pink, blue and green, fading at length into a dingy white or brown colour. *Calyx* short, very obtuse or truncate behind, a little flattened above, nearly cylindrical, deep purple; the 3 lower segments much the longest, broad and pointed, often slightly ciliated, the 2 upper extremely short and broad, with converging points, and a deep semicircular sinus between them. *Standard* roundish heart-shaped, erect and somewhat reflexed, pencilled, with a very broad vaulted claw; *wings* ascending, converging over and concealing the keel, to which they firmly adhere by a hollow gibbosity just above each of their long narrow claws; *keel* a little inflated, pale greenish or yellowish. *Style* ascending, compressed, quite flat and erect in its upper half, bearing on its inner side the bearded decumbent stigma, the apex slightly thickened and bent backwards, truncate. *Stamens* united for $\frac{2}{3}$ of their length into a continuous tube to the base, the tenth filament free, with a dilated border the length of the tube; *anthers* oblong-elliptical, flattish, pale yellow. *Legume* from about $1\frac{1}{2}$ to 2 inches long, brownish black, glabrous, subcylindrical, straight and acuminate, with a recurved point. *Seeds* greenish or yellowish, mostly mottled with purplish brown, globose, quite smooth and glabrous; *hilum* linear-oblong, about $\frac{1}{4}$ the circumference of the seed.

In Aberdeenshire, as I learn from Mr. Lawrence, the tubers of the root are well known as Gnapparts. In Sweden, *O. niger* is called Wipp-ärter or Vipp-ärter, the root having a similar sweet taste.

For a detailed account of the uses of this plant see Curt. Fl. Lond. i. t. 53.

Tribe III. HEDYSARÆÆ.

Stamens diadelphous. *Legume* lomentaceous, of one or more single-seeded indehiscent joints or cells separating transversely.

* Loment many-celled, rounded or compressed.

XV. ORNITHOPUS, Linn. Bird's-foot.

"*Calyx* elongated tubular. *Keel* very small, obtuse. *Legume* compressed, curved, of many close single-seeded joints, whose

sides are equal.—Flowers *capitate*; peduncles bearing a leaf at their apex."—*Br. Fl.*

1. *O. perpusillus*, L. *Common Bird's-foot*. "Leaves pinnate with 6—9 pairs of leaflets and a terminal one, peduncles longer than the leaves, flowers nearly sessile, legumes curved upwards with a beak scarcely longer than the upper joint."—*Br. Fl.* p. 107. *E. B.* t. 369.

On dry sandy, chalky or gravelly banks, pastures and waste ground; not at all uncommon. *Fl.* May—July. *Fr.* June. ☉.

Root white, tapering, sending out in the larger specimens innumerable procumbent, rounded and slightly hairy stems, spreading on the ground in all directions, from a few inches to upwards of a foot in length. *Leaves* impari-pinnate, of numerous ovato-obtuse hairy leaflets, about $\frac{1}{4}$ of an inch long, and so shortly stalked as to appear sessile. *Flowers* in little heads or clusters, of about 5 or 6 together, small, whitish, the standard beautifully pencilled with purple striæ. *Calyx* hairy, tubular, with a slight articulation near the base, the 3 lower segments linear, nearly equal, the 2 upper broader. *Keel* small, greenish yellow, obtuse. *Legumes* clustered, erect, whitish brown or purplish, about an inch in length by 1 line in breadth, more or less arcuate, and covered with fine spreading pubescence, 2-edged and much compressed, reticulated with prominent longitudinal anastomosing veins, and composed of elliptical joints, of which the terminal one is prolonged into a beak tipped with an incurved mucro. *Seeds*,—one in each joint, yellowish or greenish, ovato-oblong or somewhat orbicular, compressed and glabrous, the surface a little uneven.

The legumes taken in the aggregate bear a striking resemblance to the claws of a small bird; separately regarded, their likeness is still more remarkable to the tail of a scorpion armed with its aculeus or sting.

XVI. HIPPOCREPIS, Linn. Horse-shoe Vetch.

Calyx campanulate. *Keel* about as long as the wings, acuminate. *Legume* compressed, submembranaceous, of numerous joints, which are curved like a horse-shoe, so that each legume has many notches on one side.—Flowers *umbellate*, *axillary* and *nearly sessile*.

1. *H. comosa*, L. *Common Horse-shoe Vetch*. "Cæspitose, perennial, peduncles longer than the leaves, flowers 5—8 umbellate, legumes curved scabrous with scabrous joints and semicircular notches."—*Br. Fl.* p. 108. *E. B.* t. 31. *Jacq. Fl. Aust.* v. 14, t. 431.

On dry chalky banks, downs, cliffs and short pasture-ground; abundant in most of the hilly calcareous districts of the island. *Fl.* May—July. *Fr.* July, August. ☿.

E. Med.—Abundant on all the chalky declivities facing the sea at Ventnor and other parts of the Undercliff, which it enlivens during summer with its bright yellow blossoms. In most luxuriant tufts half way up the cliff between Sandown fort and Culver, marking pretty nearly the spot where *Medicago denticulata* grows at the foot. Plentiful on sloping banks on Bembridge down.

W. Med.—On the down above Plumbley's (new) hotel, Freshwater Gate. In the planted hollow below the temple at Swainston. About Carisbrooke Castle, and on all the chalky downs, *B. T. W.*

This and the other species of the genus have much the habit of *Coronilla*, a genus not yet with certainty detected in Britain.

** *Loment single-celled.*

XVII. ONOBRYCHIS, *Tourn.* Saintfoin.

Keel truncate, longer than the wings. *Legume* sessile, of one indehiscent joint, compressed, coriaceous, prickly, crested or winged.—Flowers *racemose*.

1. *O. sativa*, Lam. *Common Saintfoin. Cock's-head.* "Leaves pinnate nearly glabrous, legumes toothed on the lower margin with elevated wrinkles on the sides, wings of the corolla as short as the calyx, the keel as long as the standard, stem elongated."—*Br. Fl.* p. 108. *Hedysarum Onobrychis*, L.: *E. B.* t. 96. *Jacq. Fl. Aust.* iv. 27, t. 352.

On dry chalky banks and slopes, borders of fields and thickets, where the soil is calcareous; not uncommon, but difficult to determine whether wild or the relic of cultivation, of which it is so much the object. *Fl.* June, July. *Fr.* August. 24.

E. Med.—On a steep declivity facing the sea by the 'Crab and Lobster' at Ventnor. Between Shanklin and Bonchurch. On a bank of chalk-marl near Ashy down, between it and Nunwell. Abundant on a steep bank above the bridle road to Lower Knighton from Ashy down, near the end of Knighton E. copse.

W. Med.—Near Westover, apparently indigenous. Very common about the borders of fields on and at the foot of Freshwater down.

Order XXIV. ROSACEÆ.

"*Calyx* 4—5 lobed, free or adherent with the ovary. *Petals* 5, perigynous, equal. *Stamens* perigynous, definite or indefinite, with an incurved æstivation; *anthers* 2-celled, bursting longitudinally. *Carpels* many, rarely solitary, and then situated between two of the lobes of the calyx (when these are 5), 1-celled, 1, 2, or more seeded, free, or combined with each other and with the calyx. *Styles* simple, often lateral, distinct or combined. *Seeds* ascending or suspended, nearly without albumen: *embryo* straight, with fleshy or foliaceous cotyledons.—Herbs, or shrubs, or trees. Leaves alternate, with stipules one on each side the base of the petiole."—*Br. Fl.*

Tribe I. AMYGDALÆ.

Calyx inferior, deciduous. *Ovary* solitary, superior. *Style* 1, terminal. *Fruit* a solitary drupe, with 1 or 2 seeds suspended from the top of their cell. *Trees* or shrubs with simple leaves and stipules free from the petiole. All the parts abound in prussic acid.

I. PRUNUS, Linn. Plum. Cherry.

"Calyx 5-cleft. Petals 5. Nut of the drupe smooth, or furrowed at the margin."—*Br. Fl.*

* Young leaves convolute. Peduncles solitary or in pairs. Fruit pruinose. Plum.

1. *P. domestica*, L. Common Wild Plum-tree. "Peduncles solitary or two together, leaves ovato-lanceolate somewhat downy beneath, branches with or without spines."—*E. B.* t. 1783. *P. communis*, *Huds.*, γ . *domestica*, *Br. Fl.* p. 116.

In hedgerows, the borders of fields, and on banks in the more enclosed country; not common, and often with difficulty distinguishable from some states of the following species, of which it is probably but a still larger variety. *Fl.* April, May. *Fr.* August, September. $\frac{1}{2}$.

E. Med.—Plentiful on each side of the road and in fields adjacent at Bank-end, between Steephill and St. Lawrence, and about the latter place, apparently quite wild, but appearing so ambiguous in its character that I scarcely know whether or not to consider it as belonging rather to *P. insititia* than to the *P. domestica* of authors. The large obovate leaves and dark blue fruit, both equaling in size those of the figure in *Eng. Bot.*, with the very sparingly produced flowers, incline me to refer our plant to *P. domestica*; whilst its thorny aspect and general habit accord with the more robust forms of *P. insititia*. The leaves in my specimens are quite smooth beneath, and the bark of a light ash-gray.

W. Med.—Abundantly in the lane between Froglands and Frosthills, and Mountjoy by Carishrooke, appearing from the size of the leaves to be this rather than *P. insititia*. Very abundantly in a field-hedge nearly under the Tolt copse, near Gatcombe. The leaves of the trees at this station are remarkably firm and shining, villous along the midrib and axils of the nerves, the branches somewhat thorny. The fruit is similar to that produced at St. Lawrence, globular, dark bluish purple or damson-colour, with a strong bloom, quite eatable when fully ripe, measuring from 10 to 12 lines in diameter. In the same hedge grow several large trees producing fruit in no respect different except in being $\frac{1}{4}$ smaller, and which I suppose would be pronounced to be *P. insititia*, between which and *P. domestica* this smaller kind is intermediate.

2. *P. insititia*, L. Wild Bullace-tree.—*Fr. Sloe*, Vect. "Peduncles in pairs, leaves ovato-lanceolate downy beneath, branches ending in a spine."—*E. B.* t. 841. *P. communis*, *Huds.*, β . *insititia*, *Br. Fl.* p. 116.

β . Fruit yellowish or reddish. *White Bullace*.

In similar, but often wilder or more sequestered places than the last, and far from uncommon in most parts of the island. *Fl.* et *Fr.* cum *preced.* $\frac{1}{2}$.

E. Med.—Hedges in the lane and fields adjacent between Binstead and Ninningham, also in other places about Ryde. Hedge near Long-down farm, in plenty. Hedges near Kerne, also fruiting abundantly. Hedges about Messly, or Mersley, farm, and frequent about Newchurch in various places.

W. Med.—Plentiful in the hedges of a field immediately opposite Whitewall farm, at Thorley, producing abundance of blue plums, as large as nutmegs and with a fine bloom. By the roadside from Yarmouth to Shalfleet, a little before coming to Bouldner, in plenty. Hedges near Hill farm, Princelade, and several other places, *Mr. Snooke*. At North Court, *Mrs. Penfold !!!* Plentiful in hedges near Dodpits and Eades's, along, I believe, with *P. domestica*, as far as can be judged from the size of the leaf. Very abundant in hedges about Brixton, as near Marsh Green and by White Court, where, in the road leading from thence to Marsh Green, are some very large bushes. In this neighbourhood *P. insititia* may be seen in all its

varieties, from the Bullace upwards to what may perhaps be considered as the Wild Plum (*P. domestica*), or in a descending series to the common Sloe (*P. spinosa*).

β. In the field opposite Whitewalls farm, growing intermixed with the common form, Mrs. Penfold, 1842 !!! At Hill farm. Freshwater?

Flowers mostly but not always in pairs, frequently solitary, or even in fascicles of 4 or 5 together. Drupes globular, bluish black, with a glaucous bloom, 9 or 10 lines in diameter, tolerably eatable when fully ripe, which they are earlier than the common Sloe; nucleus ovato-globose, strongly rugose, with a deep groove along one-half of the commissure, and 4 or 5 converging furrows on the opposite side, the 2 outer or lateral ones largest; all often interrupted and ending in deep cavities or perforations.

A very perplexing species, by no means constant to the characters assigned to it. Bark usually of a lighter colour than in *P. spinosa*, gray, reddish, or partly light ash, slightly downy. The flowers are seldom produced until the leaves are ready to expand, often not till the expansion is far advanced; in *P. spinosa* the blossoms usually cover the leafless spray, and are for the most part withered whilst those of *P. insititia* are in perfection. The flowers of the common Sloe are usually not more than half the size of those of the wild Bullace-tree, generally solitary, with longer narrower petals; the leaves too are much smaller and narrower in comparison with their length. In my specimens of *P. insititia* gathered near Ryde the leaves are nearly quite glabrous, and equally so on the upper and under surfaces; nor are the flowering branches always terminated by a thorn. The flower-stalks in my Ryde specimens are pubescent, an assigned mark of the species amongst continental authors; in *P. spinosa* and the intermediate form, *P. coetanea*, I find the peduncles perfectly glabrous. In *P. insititia*, however, from Mersley, near Newchurch, the peduncles are smooth and the styles more or less curved, as in all our wild plums and cherries. Another intermediate form between *P. insititia* and *P. spinosa* grows in the trench on the E. side of Carisbrooke Castle, differing from the former in its smooth peduncles and rather smaller flowers, and uniting the reddish bark of the Bullace with the very rigid and thorny habit of the Sloe. So various indeed are the gradations between these two supposed species and *P. domestica*, that it is often difficult to assign a name to many of them. I have found the blossoms of *P. spinosa* in a few instances with two or three distinct styles at Hastings, where a large-flowered variety occurs uniting the aspect of *P. spinosa* with the leaves and blossoms of *P. insititia*, and of which I have specimens in my herbarium, but I have never seen fruit produced on it. Indeed the flowers of *P. spinosa* itself are not always solitary, but often in pairs and even occasionally fascicled, and all on the same branch. The petals are in *P. spinosa* often as much rounded, the bark nearly as pale, and the leaves as ovate as in *P. insititia*. From the above considerations it appears more than probable that the idea of *P. spinosa* and *P. insititia* being mere varieties of the same species is a well-founded one. Nor is this view of the subject weakened by the fact of *P. spinosa* inhabiting countries where *P. insititia* is unknown, as in most parts of the N. of Europe, or by their often growing side by side in similar circumstances of soil and situation, for we find both these conditions fulfilled in the three permanent forms or races of *Primula vulgaris*, of whose absolute identity there seems now no room to doubt. Koeh (Syn. Fl. Germ. et Helv.) says *P. insititia* has drooping fruit (fruct. globosis nutantibus); in *P. spinosa* the fruit is erect, according to the same author.* An inspection of the figures of *P. spinosa* and *P. insititia* in Eng. Bot. affords a convincing proof of the difficulty of expressing by any delineation the distinctions between the two, and I heartily concur with Mr. Wilson in believing both these and *P. domestica* to be simple modifications of the same species, of which *P. spinosa* is the typical form. The figure of this last in

* My observations have confirmed this, but may not the greater weight of the larger fruit of *P. insititia* be sufficient to account for its position?

E. B. is of an intermediate variety, with larger more rounded petals, like *P. insititia*, and producing its leaves, like the Bullace, simultaneously with the blossoms.

β. The few trees producing this variety, and which grow intermixed with the common blue Bullace, are distinguished by the larger size of the leaves, which equal those of *P. domestica*. The fruit is a handsome plum, globose, the size of the common blue form of the species, of a waxy translucent aspect, and of a yellow verging upon orange colour, with a considerable and unequal tint of red, chiefly on one side, agreeably tasted, a little acid and slightly bitter, but without any austerity, and covered with a bloom. This var. is well known in many places as the white Bullace, and is very commonly brought to market for tarts and puddings. The yellow Bullace is said to grow about Freshwater, at Hill farm, but whether wild or cultivated I have not yet ascertained.

3. *P. spinosa*, L. *Sloe-tree*. *Blackthorn*.—Fr. *Winter Kecksies*, Vect. "Peduncles (mostly) solitary, leaves elliptico-lanceolate somewhat downy beneath, branches very spinous."—E. B. t. 842. *P. communis*, Huds., α. *spinosa*, Br. Fl. p. 116.

α. Flowers and leaves small, the former usually produced first, branches slender, bark purplish black or cinereous, petals mostly elliptical or obovate, peduncles mostly solitary.

β. Flowers and leaves produced together. *P. spin. coetanea*, Wimm. et Grab. Fl. Siles. ii. p. 10.

γ. *intermedia*. Flowers large, subcoetaneous, petals obovato-rotundate.

δ. Flowers large, produced before the leaves.

In woods, thickets, hedges, pastures, borders of fields, and by roadsides; most abundantly everywhere. Fl. March, April, May. Fr. September, October. ♀.

β. With the former in many places. Whitefield Wood, &c.

γ. America, close to the wild pear-tree, in plenty.

δ. Frequent about Newchurch, on the road to Winford, &c., also near Ryde, Nettleston, &c.

An extremely rigid bush, from 3 or 4 to 8 or 10 feet high, rising usually in several slender stems from the stools or suckers, by which it increases much; more rarely a small tree, with a trunk of some considerable diameter; branching copiously and most irregularly from near the base, the branches divaricating and spreading in every direction, and beset with short, straight, lateral spurs, on which the leaves and flowers are chiefly borne, and which when old are produced into a long, sharp, terminal spine. Bark smooth, reddish, blackish or purplish brown, partly cinereous or banded with ash-gray, sometimes greenish. In δ. the plant has the bark and general aspect of α., but with flowers approaching the last species in size, though produced before the leaves, or at least when the latter are only just unfolding; this form is also very frequent. Leaves usually unfolding when the blossoms are nearly past, sometimes, as in β., both are produced together, as also in the intermediate form γ., which unites *P. spinosa* with *P. insititia*. Flowers white, scattered, either solitary, in pairs, or 3 or 4 together, in γ. usually single and about $\frac{1}{2}$ an inch broad, sometimes greenish in the bud, on short glabrous peduncles. Calyx smooth, its segments broad, obtuse, single-nerved, with white slightly dentato-serrated or entire margins. Petals obovate or ovato-elliptical (in γ. and δ. more roundish ovate), much (2 or 3 times) longer than the calyx, with minute claws. Stamens about 15 or 20, erect; filaments white; anthers yellow or reddish. Styles 1, 2, or even occasionally 3, curved; stigma peltate. Drupes roundish ovoid, 5 or 6 lines in diameter, bluish black, with a glaucous bloom, sometimes globular and purplish, with hardly any bloom, intensely astringent and austere, remaining through the earlier part of winter on the tree; nucleus subglobose, rugose, with an adhering pulp as in all our species or varieties of wild plums, strongly grooved along the margin.

A period of cold weather, which happens commonly whilst the Sloe is blossoming, is called by the country people here the "Blackthorn winter."

** Young leaves conduplicate. Peduncles in racemose or umbellate clusters. Fruit without bloom. Cherry.

† Inflorescence racemose; racemes lateral. Padus.

†4. *P. Padus*, L. *Bird Cherry*. Arborescent; leaves deciduous obovate-oblong cuspidato-acuminate serrated wrinkled glabrous not shining, petioles with two glands at their summit, racemes elongated erect at length drooping. *Linn. Sp. Pl.* 677. *Sm. E. Fl.* ii. 354. *Br. Fl.* 116. *Bab. Man.* 90. *Loud. Arb. Brit.* ii. 709, and vi. 99, t. 30, F. *E. B.* xx. t. 1383. *Hoppe, Ect. Plant. Ratisb.* cent. 4, t. 309. *Guimp. und Hayne, Abbild. der Deutsch. Holtzart.* i. 77, t. 59.

In woods and thickets; very rare, and doubtless introduced. *Fl.* May. *Fr.* August. ½.

β. Leaves evenly and finely serrate, racemes more upright. *P. Pad.* β. *rubra*, *Willd. Sp. Pl.* 985. *P. rubra*, *Idem, Berlin. Baumz.* 237, t. iv. fig. 2 (folium).

E. Med.—In a thicket below the Cowleaze, St. John's, sparingly, as a slender shrub, of a few feet in height, probably conveyed thither by birds from gardens at Ryde, in which it is frequent. On the wooded steep below Cook's Castle, in considerable plenty, both as a bush and tree, but I suspect not truly wild there.

A handsome low tree or large straggling shrub, seldom exceeding 10 or 20 feet in the wild state, but sometimes attaining to double that height in gardens and plantations. Branches alternate, long, slender, tough and flexile, partly pendulous, covered with a dark, reddish brown, smooth, bitter-tasting bark. Leaves deciduous, scattered, or 2 or 3 together, when fully grown, or after the flowers are past, from about 2½ to 4 inches long, and from about 1 to 2½ inches wide, obovato-oblong or obovato-elliptical, acute or more commonly cuspidato-acuminate, more or less cuneately attenuated below, rounded, or subcordate and mostly unequal at base, sharply, unequally and doubly (or as in our variety β. finely, evenly and simply) serrate, the serratures pointing forward, incurved, glanduloso-mucronulate; bright green but not shining above, wrinkled, and, with the exception of a slight hairiness in the axils of the veins beneath, glabrous. Petioles about 6—9 lines in length, usually with a pair of small glands just at their junction with the leaf, one or both of which are occasionally though rarely wanting. Stipules pale, linear, deciduous. Flowers numerous, small, white, soon falling, in simple, naked, or slightly leafy lateral racemes, of 3 or 4 inches in length, from the wood of the second year, and which are, as Gaudin remarks, more or less erect, afterwards drooping. Pedicels nearly erect, scarcely half an inch long, glabrous, at length patent, each from the axil of an oblong-lanceolate, obtuse, elongated, concavo-canaliculate, membranaceous and pubescent, very early caducous bract (Bertolini). Calyx shallow, hairy and glandular within. Sepals broad, rounded and obtuse, fringed with white pellucid hairs or glands. Petals twice or thrice the length of the calyx, irregularly jagged or erose along their margin, obovato-orbicular, with scarcely any claws. Stamens in two rows, the inner series placed irregularly. Style straight; stigma large, flat, lobed and roundish. Drupes the size of peas, globose, black and shining (sometimes, it is reported, red), juicy, bitter and austere; nucleus subglobose, a little pointed at each end, rough with broad, furrowed, tubercular ridges; the kernel white and bitter.

The Bird Cherry tree, though common in hedges and high rocky woods in many of the northern and midland counties of England, is very rare in the southern, and can scarcely be regarded as a native of the Isle of Wight, where however it is now quite naturalised in the few stations above recorded. It is very frequently seen in the gardens at Ryde, to which it is a great though transitory

ornament, making a beautiful appearance when in blossom in the early part of May, and whilst the foliage is still fresh and tender. The flowers, which have a faint but not unpleasant odour, resembling that of black currants, are extremely short-lived, and when these are past, the now full-grown leaves assume a coarse wrinkled appearance, and are generally much eaten and disfigured by insects, especially the larvæ of *Lepidoptera*, to whose attacks this tree is most peculiarly obnoxious. Hence the Bird Cherry makes but a shabby figure in plantations and shrubberies during a great part of the summer and autumn months. This and the Mountain Ash (*Pyrus Aucuparia*) are perhaps the hardiest of European trees, ranging to the extremest northern parts of that continent (lat. 70°, 71°). The bark is stated, and probably with reason, to contain hydrocyanic acid, as when just stripped off it exhales a strong smell of bitter almonds. The fruit, called Hag-berries in the North of England and Scotland, is eagerly devoured by birds, though unpalatable if not hurtful to mankind, in flavour partaking somewhat of black currants.

In the species, as we find it in this island, the leaves are very finely and sharply serrated, and the racemes extremely upright, not at all lax or disposed to droop in that state, hence I presume it to be the variety β . of Willdenow's *Sp. Pl.*, and which seems to come very near to the *P. virginiana* and *P. serotina* of North America, two species whose synonymes, if they be really distinct, which Sir Wm. Hooker doubts, are almost inextricably commingled. A good impression of this variety, differing merely in having the racemes a little lax, is given in Hoppe's 'Ectypa Plantarum Ratisbonensium,' referred to above, a work valuable for the correctness of its nomenclature and the unerring fidelity of the plates, transcripts as they are of Nature herself, however obscured in some of the minuter details, from the difficulties inseparable from the process of transmitting a perfect image of a dried specimen to paper. The authors of the 'Flora of North America' consider *P. serotina* as quite distinct from *P. virginiana*, the former being a timber-tree of the largest size, which neither the latter nor our European *P. Padus* ever become. The fruit of *P. Padus* would appear to be occasionally red, as in *P. serotina*, but we know that in the Wild Cherry (*P. avium*) this difference of colour affords no specific distinction, and we can bear witness to the truth of Hooker's remark (*Fl. Bor. Amer.* i. p. 170), "how little dependence is to be placed upon the foliage of our own *Cerasus Padus*, a species so nearly allied to this (*C. serotina*, *P. virginiana*, Torrey and Gray) that M. Seringe (in DeCandolle) seems to doubt if it be really distinct."

The common Cherry Laurel and Portugal Laurel of our gardens (*P. Laurocerasus* and *P. lusitanica*) belong to this section with deciduous leaf-buds, and are in fact evergreen Bird Cherries, as is the beautiful *P. Caroliniana* of N. America, of which there is a fine specimen in the grounds of the Priory, formerly the seat of the late Grose Smith, Esq.

†† *Inflorescence umbellate.*

5. *P. avium*, L. *Common or Wild Cherry-tree.* Vect. *Merry-tree.* Fr. *Merries.* Scot. *Gean-tree.* Fr. *Geans*.* *Arborescent*, leaves ovate ovate-oblong or oblongo-elliptical cuspidate acuminate coarsely serrate downy beneath drooping, umbels sessile lax aggregate around the leaf-buds, sepals somewhat pointed, petals thin flaccid a little connivent, root scarcely stoloniferous. *Linn. Sp. Pl.* 680; *Fl. Suec.* 165. *P. Cerasus*, Sm. *E. Fl.* ii. 354 (ex parte). *Br. Fl.* 116. *Bab. Man.* *E. B.* x. t. 706 (*P. Cer.*) *Fl.*

* From the French, Guignier, Guigne. Merise is thought to be a contraction of *amère cerise*, from the bitterness of the Wild Cherry.—*Loud. Arb. Brit.*, article *Cerasus*.

Dan. x. t. 1647 (cum priore var. fructu nigro). *Loud. Arb. Brit.* ii. 693 (*Cer. sylvestris*).

a. Fruit red.

β. Fruit black.

Extremely common and often very abundant in woods, thickets, hedges and copses over the greater part of the island. *Fl.* April, May. *Fr.* July. $\frac{1}{2}$.

E. Med.—In Quarr copse, about St. John's, and elsewhere near Ryde, frequent, but seldom very large. Common in woods about Cowes. Abundant at Bordwood. In the Parsonage Lynch and elsewhere about Newchurch, Kerne and Apse. Near Pidford, plentifully. Many trees of large size are found in Knighton West copse, near Shanklin church, Barton farm, near Landguard, &c., mostly if not always with a small, red, acid, and very bitter scarcely eatable fruit. Apse Castle. About America. In Park copse and elsewhere about Cliff farm, common. Under Cook's Castle, in plenty. In Cheverton copse, a little S.S.W. of Lee farm. Abundant in thickets about Park farm, Appuldurcombe. Most abundantly in a copse near to Hilliard's, between Lake and Shanklin.

W. Med.—Tolt Copse, and about Hill farm, Gatecombe, in coppices. About Marvel Wood. Snowdrop Lane, near Gatecombe. Swainston park.

β. A tree or two of the Black Merry grows in Bordwood copse, producing a small tolerably well tasting fruit, slightly bitter, but without acidity. At Foxholes, near Lower Knighton, a single tree, *Mr. Williams*.

A tree, often of a timber-like size, from 20 to 40 feet or even double that height, rising, when allowed to acquire its natural dimensions, with a single clean trunk, from 1 to 3 feet in diameter, straight, and covered with a smooth bark, the epidermis of which is of a reddish gray striped or mottled with whitish ash, and from the transverse direction of its fibres, which lie at right angles to those of the true bark, appearing annulated or ring-streaked; in very old trees becoming rough and fissured. *Branches* spreading or divaricate, long, straight and flexible, in the younger trees somewhat verticillate, the whole forming a rounded, fastigate or conical head. *Root* creeping, scarcely if at all sending up suckers at the crown,* as is so notably the case in the next species. *Leaves* beginning to expand just before the blossoms, and like them growing in sessile clusters, partly on the main branch, partly on short lateral spurs or abortive twigs, 6 to 8 or more in a cluster, from the bosom of the deciduous leaf-buds, the inner scales of which are subfoliaceous, greenish, often 3-cleft, spreading and partly reflexed, hairy within and very glutinous; the outer short, brownish, concave, imbricated, smooth and chaffy: when young the leaves are folded together, of a tender lucid green more or less tinged with reddish brown, drooping or pendulous, a position they retain ever after in various degrees; when fully grown from about $3\frac{1}{2}$ to 6 inches long, and from 2 to 3 inches wide, varying in shape from ovate to obovato-oblong or oblongo-elliptical, cuspidato-acuminate, rounded, cuneately attenuate or subtruncate at base, coarsely, deeply and unequally doubly inciso-serrate; serratures rounded or obtuse, obliquely tipped with a small pale red pellucid gland, terminating the median nerve, of which glands there is also a trace in the form of reddish points in the angles of the serratures on the under side of the leaf, which in all stages of growth is beset, principally about the midrib and lateral nervures,

* *Mr. Borrer* has shown me that the root is certainly creeping, and that the tree is propagated partly by that means, but there is unquestionably not the same disposition to throw up copious suckers close around the primary stem as in the Morello Cherry. In such young trees as I have caused to be dug up, I find the root to be composed of numerous long, stout, branched fibres, spreading nearly horizontally from the bottom of a single stem, or descending more or less obliquely, scarcely one having a vertical direction; and in no instance have I yet seen any disposition to throw out suckers, either at the root, crown, or at any distance betwixt that and the extremity of the fibres, from whence alone I presume fresh plants to be in general produced.

with lax scattered hairs : sometimes though rarely the leaves are nearly glabrous beneath. *Petioles* from an inch to an inch and a half in length, reddish and slightly downy, grooved above, with a pair of large, roundish or oval, depressed, crimson glands, situated sometimes at the very base of the leaf, more commonly at a short distance below it, either opposite each other or a little apart, now and then solitary or absent. *Stipules*,—a pair at the foot of each leafstalk, glanduloso-ciliate with long subulate points ; viscid and deciduous. *Flowers* coetaneous with the expansion of the young leaves, in sessile *umbels* that are partly scattered, partly aggregate, mostly clustered around a leaf-bud, and that so copiously on adult trees as almost to conceal the branches with the profusion of blossom, which commonly happens with us about the middle of April. *Peduncles* from 3 to 5 in each umbel, about 2 inches long, round, glabrous, springing from buds similar to those of the leaves, but of which the inner scales never become wholly or in part truly foliaceous, as in the next species ; lax or drooping, slightly enlarged upwards beneath the calyx, each peduncle with a small, oblong, pale and gland-fringed *bract*, for the most part at its insertion. *Calyx* campanulate, glabrous, veined or ribbed, hence somewhat angular, and, as noticed by Mr. Leighton, suddenly contracted beneath the 5 ovato-oblong, somewhat pointed,* 3-nerved, entire and strongly reflexed segments. *Petals* white, obovato-rotundate, more or less emarginate, veiny, thin, weak and flaccid, scarcely spreading, quickly fading, with a slight pleasant scent. *Stamens* partly about the length of the style, partly much shorter, the innermost very short and connivent ; *anthers* bright yellow. *Germen* ovate, glabrous, with a line or furrow on one side, continued spirally up the cylindrical somewhat curved *style*, that gradually enlarges to the flat disciform *stigma* in a lateral notch, on which the spiral groove along the style terminates. *Fruit* subcordato-globose, in α . small, bright red, very bitter and acid, not eatable ; in β . somewhat larger, black, tolerably well tasting, juicy, with some bitterness and but little acidity ; both kinds ripening in July ; *nucleus* subglobose, a little compressed, quite smooth and even, not bordered.

6. *P. Cerasus*, L. *Sour Cherry-tree*. *Morello Cherry*. Gall. *Cerisier*, Fr. *Cerises*. Fruticose, leaves broadly oblongo-obovate or obovato-elliptical cuspidato-acuminate crenato-serrate firm glabrous not drooping, umbels few-flowered mostly scattered, peduncles erect or patent (not lax), inner scales of the flower-buds leafy, sepals obtuse, petals firm widely spreading, root stoloniferous. *Linn. Sp. Pl.* 679. *Br. Fl.* p. 116. *Bab. Man.* 90. *E. B. Suppl.* iv. t. 2863. *Cerasus vulgaris*, Mill. *Loud. Arb. Brit.* ii. p. 693. *Cer. austera*, Leight. *Fl. of Shrops.* add. 524. *P. Cerasus*, Hoppe, *Ect. Plant.* cent. 8, t. 748. *Mert. und Koch in Röhl. Deutschl. Fl.* iii. 408. *Koch, Syn. Fl. Germ.* Pollich, *Palat.* ii. 27. *Leers, Fl. Herborn.* (ed. 2) 116. *Wahlenb. Fl. Upsal.* 164. *P. acida vel austera*, Ehrh. teste *Wahlenb. et fide spec. Upsaliensis ab Ehrharto ipso in herb. amiciss. Benth. cum nostrat. vectianis comparati.* *P. caproniana*, Gaud. *Fl. Helv.* iii. 307. *Hall. Hist. Stirp. Helv.* N. 1083. *P. Cer.*, Lejeune, *Rev. de la Fl. de Spa*, 92. *Cer. collina*, Lej. et Court. *Compend. Fl. Belg.* ii. 130. *Bænningh. Fl. Monast.* 141.

In hedgerows, thickets, the borders of woods, on steep broken banks and bushy slopes ; in many places. *Fl.* April, May. *Fr.* July, August ? $\frac{1}{2}$.

* The calyx-segments are often quite obtuse and rounded, but scarcely ever so broadly as in *P. Cerasus*, having always a certain degree of taper, or disposition to pointedness.

E. Med.—First found by me in a wood between Whippingham street and Wootton church, but nearer to the former, and close to a place called Blankets, growing plentifully within the wood at its western angle, and apparently indigenous. In rather inaccessible parts of Shanklin chine, but I think originating from Morello Cherry trees in a garden above, lately occupied by General Vining. Abundant on an overhanging bank between Chine cottage and Rose Cliff, the bushes very stout and old. Bank by the roadside from Newport to Godshill, before coming to Pidford, certainly wild. Near Old Park, but perhaps planted. Abundantly along the crest of a steep bank, surrounded by cornfields, about half a mile W. Niton church, seeming perfectly wild. A single stout tree, 8 or 9 feet high, in a very elevated and sequestered part of Appuldurcombe park, in the great wood fenced so as a preserve for game. At Godshill, on the West side, below the church. Abundant in a narrow lane leading up to Frogwell near Godshill, also on a high bank close to French Mill, by the roadside.

W. Med.—Field-hedge in Gurnet bay. At Chale. About Carisbrooke, in the lane leading up from thence to Buccombe down. Between Froglands and Mountjoy. In this last station it grows abundantly along the field side or crest of the steep side or bank of the road on the right hand going from Froglands to Frosthills towards Mountjoy, and a short distance only from the former places. Copse by Gottens. Thicket between Yafford House and Comptonfield, in some plenty. Hedge on the South side of Brixton. Near Ramsdown farm. On Buccombe down, the Miss Hardfields.

That the elegant shrub now before us is what Linnæus and most, if not all, the continental authors understood by his *P. Cerasus*, and that the synonymes of this and *P. avium* of the same authors have been misunderstood, and applied by British authors to slight varieties (in the fruit) of our common Wild Cherry (undoubtedly the *P. avium* of Linn. and others), will, I think, be obvious to any one who compares our present plant with the descriptions given of both by the writers above quoted. There seems no reason for supposing that any of the varieties of the Wild Cherry mentioned by Smith bear reference to the species now under consideration, which I believe has hitherto been overlooked, or at least unrecorded as a native of Britain.

A much and irregularly branched shrub or very small tree, from 5 or 6 to 8 or 10 feet in height, sending up numerous suckers from the root, rising usually with several erect slender stems, from about the thickness of the middle finger to that of the wrist, rarely with one or two pretty stout trunks; covered with a reddish brown or dark gray very smooth bark, transversely streaked or mottled with ashy white, the extremities of the slender virgate branches cinereous. *Leaves* partly scattered or alternate, partly fasciculate, appearing with the blossoms towards the close of April, much smaller than in the last species, when fully grown from about $1\frac{1}{2}$ to $3\frac{1}{2}$ to 4 inches in length, broadly oblongo-obovate, or obovato-elliptical, the smaller and lower frequently more or less approaching to a roundish obovate figure; shortly and abruptly cuspidato-acuminate, less coarsely and unequally, almost doubly crenato-serrato, the serratures rounder or more obtuse than in the last, tipped as in that with a similar point or gland, the base of the leaves, especially of the superior and larger, more constantly cuneato-attenuated, seldom much rounded, and never truncate, as is sometimes the case in *P. avium*. When young the leaves are smaller and rounder than subsequently, folded together, varnished as it were with a gummy exudation; of an extremely vivid bright green, with little if any of the red tinge so conspicuous in those of the foregoing, unless in the very earliest stage of their development, and then but occasionally; more or less hairy beneath along the midrib and natural nervures, which hairiness soon disappears, and long before the leaves are full-grown they become perfectly glabrous on both sides: in this latter stage they have increased in size, and acquired a more oblong shape, with larger, more cuspidate points, a dark green colour and an opaque, firm, subcoriaceous texture, which the leaves of *P. avium* possess in a very inferior degree, nor, as in that, are the leaves of our present species at all drooping or pendulous, but in every period of their growth erect or horizontal. *Petioles* from half an inch to an inch long, channelled, usually without glands at

the summit, these being more commonly placed on the leaf itself at the base, or not unfrequently wanting, smaller and rounder than in *P. avium*, sometimes only one is present. *Stipules*,—a pair at the base of each leafstalk, deciduous, linear, glanduloso-serrate, much shorter than the petiole, with broad, dilated (not as in *P. avium* long and subulate), green points. *Scales* of the leaf- and flower-buds similar to each other and to those of *P. avium*, but upright, not spreading open during inflorescence, and the innermost of both assume more or less completely the form of true but very diminutive leaves. *Umbels* lateral, but not produced on short spurs, sessile or nearly so, mostly scattered, solitary or two together, seldom in the really wild plant crowded or aggregated as in the foregoing, few- (2—4, rarely 5 or 6-) flowered, with an occasional single-flowered bud interspersed. *Peduncles* from about 9 to 16 lines in length, round, simple, glabrous, erect, spreading or deflexed, not drooping from their laxity as in *P. avium*, gradually thickened upwards below the calyx, with one or two small, pale green, oblong, deeply glanduloso-incised bracts at the base of each. *Blossoms* large (above an inch across), white, faintly but agreeably scented, very strikingly contrasting with the light vivid green of the young leaves; always produced considerably later (10 or 14 days) in the season than those of the common Wild Cherry. *Calyx* as in *P. avium*, but far less suddenly contracted below the broader, much more obtuse and rounded, strongly deflexed segments, which are scarcely $\frac{1}{3}$ the length of the petals, and furnished for the most part with a few distant crenate serratures, quite wanting in the other. *Petals* cordato-rotundate, firm, concave, waved, veiny, slightly emarginate, spreading widely (not flaccid as in *P. avium*), with very short minute claws. *Ovary* oblong, glabrous. *Stamens*, *style* and *stigma* exactly as in the last. *Fruit* (drupe) small, subdepresso-globose, scarcely cordate, red, juicy and acid, ripening very late, and sparingly produced in the wild state, at least in this island.

Prunus Cerasus, the Cerisier and Griothier of the French, the Saverkirshen or Weichselbaum of the Germans, is the parent stock of the various kinds of late acid Cherries, the Kentish and Flemish Cherries, the Morello and May Dukes (the last said to be a corruption of Medoc, a famous wine district near Bordeaux), and numerous minor varieties. A very ornamental double-flowered sort is frequent in gardens.

Some of the continental botanists subdivide our *P. Cerasus* into two species, distinguished by the colour of the fruit and the upright or drooping branches, but the alleged differences are so slight, and the synonymes so confused and reciprocally applied to each by different authors, as to evince the indeterminate characters on which they are founded. That taken from the presence or absence of glands on the leaves cannot be relied upon.

Mr. Borrer considers the root of *P. avium* to be creeping, but if so it is certainly in a different way from this. I find my observations on the roots of these two cherries were long since anticipated by Fries, who says, speaking of *P. avium*, "*Radice palari, nunquam repente a prioris formis eximie repentibus et stoloniferis certissime dignoscitur*," (*Fries*, *Corpus Flor. Provin. Suec. i.*—*Scanica*, p. 110).*

* The strange confusion and misapprehension which till very lately prevailed amongst nearly all British, and even some foreign botanists, with respect to this and the foregoing most palpably distinct species of Cherry, have been remarked upon by me in the additions and corrections to Leighton's '*Flora of Shropshire*,' and in the '*Supplement to English Botany*,' as quoted above. Those observations it is unnecessary here to repeat; a few words however on the same subject may not be deemed superfluous, when we see so accurate and laborious a writer as Bertolini still regarding these trees as mere varieties of each other, and perceive a reluctance to admit them as distinct in more than one of our leading botanists in this country.

Much of the confusion attendant on the discrimination of *P. avium* and *P. Cerasus* has, I think, arisen from two principal causes: 1st, the partial distribution of the latter in the wild state; and 2ndly, the habit which has prevailed with

Tribe II. SPIRÆÆ.

"Fruit formed of several follicles. Seeds 1—6, suspended from the inner edges of the follicles. Calyx persistent."—Bab. Man.

II. SPIRÆA, Linn. Dropwort.

Calyx inferior, equally 5-cleft, persistent. *Petals* 5, roundish. *Follicles* 3—12, usually distinct, 1-celled, 2-valved, with few seeds.

1. *S. Filipendula*, L. *Common Dropwort*. "Herbaceous, leaves interruptedly pinnated, all the leaflets uniform deeply cut

too many of regarding all the cultivated cherries as originating from one species, since in that state it has been found difficult to draw an exact line of demarcation between the best-marked varieties; as also the bad practice, so prevalent on the continent, of introducing cultivated fruit-trees into general and local Floras, and of endeavouring to establish specific characters on horticultural races or permanent varieties.

There seems good reason for supposing *P. Cerasus* to be as truly indigenous to Europe as *P. avium*, but being much more limited in its range than the latter, and far more local in its habitats, it is rarely brought under the notice of observers in its genuine native state; the majority know it only in its multitudinous phases as the Morello Cherry of the garden and orchard, in which condition it is commonly forced to amalgamate with its congener by the operations of budding or grafting. From this cause, and from the changes which cultivation induces in all vegetables long submitted to its influence, numerous varieties of the Cherry have arisen which it is difficult to refer to their primitive types, intermediate, as many of them are, between the two original stocks, whilst the features of the rest are obscured or obliterated by centuries of domestication.

Though *Prunus Cerasus* appears to be distributed over a considerable part of central and southern Europe, it would seem not to be of general occurrence within these limits, and it is perhaps often passed by for a dwarf variety of *P. avium*, which on a hasty view it certainly pretty closely resembles. Guided in all likelihood by the name, and the traditional introduction of the Cherry (in its improved cultivated forms) into Europe by Lucullus, authors have in general agreed in assigning to this tree an Asiatic origin, and the writer of the article "*Cerasus*" in Loudon's '*Arboretum Britannicum*' says that it is *never* found in a truly wild state in Europe, and that the aboriginal form is unknown, a direct contradiction of the view just before taken by the same writer, seeing that he holds both *P. Cerasus* and *P. avium* to be only varied forms of one species, but allows the latter to be indigenous to our quarter of the globe, and very distinct in its native habitats; it must therefore be that primitive form or type from which the first is a derivative.

The fact is, that in this island and elsewhere, both in our own country and on the continent, *Prunus Cerasus* grows in places remote enough from habitations, though we do not deny it is occasionally found escaped from cultivation, as indeed a truly indigenous plant would be peculiarly prone to do. As it naturally affects free, open, sunny situations, it has less perhaps the appearance of an aboriginal than *P. avium*, being seldom found, like that, in the interior of woods, where there is not a free circulation of air.

The figures referred to in '*English Botany*' well express the characters and difference of colouring which distinguish our two native Cherries. The separation of *Prunus* and *Cerasus* as genera is unnatural, because certain species, as *P. Mahaleb* for example, unite the habit and structure of these sectional divisions.

and serrated, flowers paniculato-cymose, follicles hairy."—*Br. Fl.* p. 117. *E. B.* t. 284.

In dry gravelly or chalky and hilly pastures, also in open groves and thickets; very rare. *Fl.* June, July. 24.

E. Med.—On the downs above Steephill, *Dr. Martin*.

W. Med.—In the great plantation of fir, beech, &c., on the slope of the down (Westover Down?) near Westover, in one or two spots abundantly. A single specimen found in Northwood park, 1845, *Miss G. Kilderbee*.

Root woody, tapering, reddish brown externally, with a few thickish fibres, and most commonly a few roundish or oblong? fleshy tubers, of a reddish colour within,* attached to the root by a slender filament, whence the specific name. *Stem* erect, pale green, from about 1 to 2 or even 3 feet high, according to situation, rounded or bluntly angular, solid, simple and smoothish below, mostly sparingly branched and more deeply furrowed above. *Leaves* interruptedly pinnate or pinnatisect; of the stem few, distant, somewhat erect, the uppermost extremely short; of the root numerous, spreading; the common stalk or rachis semiterete, compressed, with a deep channel or groove above, and in the radical leaves naked for some distance from the base upwards; *leaflets* numerous, partly opposite, partly alternate, deep green, beneath paler and netted with irregularly anastomosing veins, somewhat shining and rigid, primary ones of the stem-leaves sub-linear, deeply and lobately incised, dentate, serrate or subpinnatifid, with 2 or 3 far smaller and shorter, toothed or cut, intermediate leaflets between each pair; those of the radical leaves broader or oblong, rather less remote and more compound or distinctly lobed, otherwise similar: of all the leaves the leaflets are quite sessile, a little clasping, not at all decurrent, their segments acute, spreading or slightly recurved, with a few scattered bristly hairs along their margin, and a terminal seta, otherwise quite glabrous, the primary ones dwindling gradually towards the base to the size and shape of the smaller intermediate or secondary leaflets. *Stipules* of the root-leaves "linear, acute, entire" (*Bab.*), soon withering, of the stem-leaves oblong-ovate or rotundate, clasping, sharply cut, toothed and serrate but not lobed like the leaflets. *Cyme* terminal, paniced, large, repeatedly compound, the branches very unequal, erect. *Flowers* numerous, much larger than in *S. Ulmaria*, cream-coloured, often but not always tipped with rose-red, faintly but pleasantly scented. *Pedicels* slender, unequal. *Bracts* none. *Calyx* very small, greenish; *sepals* oblong, rounded, a little hairy on the inside at their base. *Petals* obovato-oblong, greatly exceeding the calyx in length, entire, attenuated into long very slender claws, mostly 6 or 7, rarely but 5, at least in my specimens.† *Stamens* numerous, unequal; *filaments* slender; *anthers* yellowish, orbicular. *Germens* numerous, very small, conical, setosely hispid. *Styles* short, thick, recurved; *stigmas* very large, roundish oblong, curved and 2-lobed, with a central furrow.

2. *S. Ulmaria*, L. *Meadow Sweet. Queen of the Meadows.* "Herbaceous, leaves interruptedly pinnated serrated downy beneath, lateral leaflets undivided terminal one largest and lobed, flowers in compound (and as it were proliferous) cymes, follicles glabrous."—*Br. Fl.* p. 117. *E. B.* t. 960.

Everywhere abundant in moist meadows, wet woods, thickets and osier-beds, by the sides of rivers, streams and ditches. *Fl.* June—August. 24.

* These tubers have a nutty but bitterish taste, and are rather tough.

† I find the same number of petals in garden specimens.

Tribe III. *DRYADEÆ*.

"Fruit formed of small dry (in *Rubus succulent*) nuts, few, or numerous and then inserted on a fleshy or succulent receptacle. *Calyx persistent*."—Bab. Man.

III. *GEUM*, Linn. Avens.

Calyx 10-cleft, alternate segments minute. *Petals* 5. *Pericarps* with long geniculated awns. *Receptacle* elongated.

1. *G. urbanum*, L. *Common Avens*. *Herb Bennet*. "Flowers erect, heads of fruit sessile, upper joint of the awn glabrous and much shorter than the lower one, cauline leaves ternate, radical ones interruptedly pinnate and lyrate."—*Br. Fl.* p. 118. *E. B.* t. 1400.

In woods, groves, thickets, on hedgebanks, and in damp shady places; common. *Fl.* May—August. 24.

The Water Avens (*G. rivale*, L.), not hitherto found in the island, abounds in wet meadows in various parts of the county.

IV. *POTERIUM*, Linn. Salad Burnet.

"Flowers collected into a head, monœcious or polygamous; upper ones fertile. *Calyx* with 3 or 4 bractœas at the base. *Petals* 0. *Barren flowers*:—*Calyx* of 4 deep segments. *Stamens* 30—40, with very long flaccid filaments. *Fertile flowers*:—*Calyx* tubular, contracted at the mouth, with 4 deciduous teeth. *Stigmas* tufted. *Achenes* 1—2, invested with the hardened 4-angled tube of the calyx."—*Br. Fl.*

1. *P. Sanguisorba*, L. *Common Salad Burnet*. *Lesser Burnet*. "Calyx of fruit sessile glabrous unarmed reticulate-rugulose not pitted, the angles margined, styles 2, stem somewhat angular."—*Br. Fl.* p. 127. *E. B.* t. 860.

On dry mostly calcareous pastures and banks; abundant on most of the high chalk downs throughout the island. *Fl.* May—August. 24.

E. Med.—In old stone-pits and elsewhere at Binstead, but not common. In profusion at Ventnor on the chalky slopes, and in most parts along the Undercliff. Sandown bay.

W. Med.—Very abundant in the great plantation of fir, beech, &c., near Westover.

Root thick and creeping, with a brownish epidermis, fleshy and often of a blood-red within, hard, tough and woody in the centre, very astringent. *Stems* erect, about a foot high, wavy, solid, deeply furrowed and angular, bright purple and glabrous above, green and downy with soft, spreading, simple hairs towards the base, the branches few, distant and alternate, mostly simple and nearly leafless. *Leaves* chiefly radical and near the bottom of the stem, erect or spreading, imparipinnate, of 6—9 pairs of roundish or ovate, very shortly stalked leaflets, of a grayish green above, paler and more glaucous beneath, deeply and evenly inciso-serrate, the terminal serratures much the smallest, the leaflets themselves diminishing

towards the base of the common hairy petiole, and alternate, the rest opposite or nearly so, all nearly or quite glabrous above, mostly a little hairy beneath, and chiefly along the midrib, with shining appressed pubescence. *Flowers* sessile, in dense, globose, solitary, terminal heads, with occasional sessile and lateral ones, from the size of a pea to that of a musket-ball, the fertile and barren (and not unfrequently, as I find, hermaphrodite) flowers intermixed on some heads, whilst others consist wholly of one or other, those containing the former being generally smaller. *Bracts* 3 or 4 beneath each flower, ovate, brownish white, concave, membranous and very hairy, sometimes coloured like the perianth, and unequal. *Perianth* in flowers of both sexes in 4 deep, broadly ovate, bluntish 3-ribbed segments, green, with broad white margins more or less tinged with purple, and tipped with a minute fascicle of white pellucid hairs, the tube very short, minute, hairy, contracted at the mouth into an annular shape, and with 4 prominent angles, most conspicuous in the fertile flower: the perianth of the fertile flowers is smaller and more deeply coloured with green and purple than the barren. *Stamens* inserted on the contracted summit of the tube, very numerous, longer than the perianth, with slender white flaccid and pendant *filaments*; *anthers* of 2 reniform lobes, pale yellow or reddish, bursting laterally. *Styles* 1 or 2 (in the specimens before me as often 1 as 2), passing through an annular contraction at the mouth of the tube, greenish; *stigmas* a tuft of radiating, pellucid, bright crimson filaments, covered with glandular points, very beautiful.

I find the barren flowers very commonly furnished with an evident pistil, but the stigma is smaller, less tufted, and probably incapable of performing its functions.

[2. *P. muricatum*, Spach. *Muricated Salad Burnet*. "Calyx of the fruit sessile glabrous wrinkled with pits whose margins are muricated, angles crested, stem somewhat angular."—*Br. Fl.* p. 127.

"Dry calcareous soil. *Fl.* July. 24."—*Br. Fl.*

Above the Culver cliffs, in several places, on both sides of a hedge which runs East and West along the top of the hill; not however in the ancient turf of the down, but in land that had formerly been under the plough, though some of it, especially North of the hedge, not recently: *W. Borrer, Esq.*, in litt.

"Very similar to the last, of which it was formerly considered a variety, and from which it is chiefly distinguishable by the fructiferous calyx, and by the much larger fruit."—*Br. Fl.—Edrs.*]

V. AGRIMONIA, *Linn.* Agrimony.

"Calyx turbinate, at length hardened, covered with hooked bristles, 5-cleft. *Petals* 5, inserted upon the calyx. *Stamens* 7—20. *Achenes* 2."—*Br. Fl.*

1. *A. Eupatoria*, L. *Common Agrimony*. "Cauline leaves interruptedly pinnate softly villous underneath, leaflets 7—9 rounded at the base with 6—8 coarse serratures on each side, terminal one stalked, spikes elongated interrupted, calyx-tube obconical deeply furrowed to the base, the teeth with a straight point, exterior spines spreading."—*Br. Fl.* p. 127. *E. B.* t. 1335.

In dry woods, thickets, pastures and waste places, by roadsides, along hedges and borders of fields; very common. *Fl.* June, July. 24.

Seeds 2 (or often solitary), sometimes 3, yellowish, smooth, ovato-rotundate, erect, firmly enclosed in the hard woody and now strongly deflexed calyx, which is crowned with the connivent segments and several rows of reddish hooked prickles, of which the outer are spreading, the inner ones erect, adhering, like those of the Burdock, to every object with which they come in contact.

VI. *ALCHEMILLA*, Linn. Lady's-mantle.

Calyx 8-cleft, the 4 alternate and outer segments the smallest.
Petals 0. *Stamens* 1—4. *Achenes* 1—2.

1. *A. arvensis*, Sm. *Field Lady's-mantle*. *Parsley Piert*.
"Leaves trifid pubescent, lobes cuneate deeply cut, flowers sessile
axillary."—*Br. Fl.* p. 126. *E. B.* t. 1011. *Aphanes*, L.

Common everywhere in dry, barren, sandy or gravelly pastures, cornfields, fallows, waste ground, and on wall-tops. *Fl.* May—October. ☉.

VII. *POTENTILLA*, Linn. Cinquefoil.

Calyx 8—10 cleft, segments alternately smaller. *Petals* 4—5.
Achenes numerous, minute, tipped with a minute style, placed upon a small dry flat *receptacle*.

A. Petals yellow.

* *Leaves pinnate.*

1. *P. anserina*, L. *Silver Weed*. *Wild Tansy*. "Leaves interruptedly pinnate serrated silky especially beneath, peduncles axillary single-flowered, stem creeping."—*Br. Fl.* p. 122. *E. B.* t. 861.

In moist meadows and pastures, wet thickets, on ditchbanks, also in dry waste places, by roadsides, borders of fields, &c.; very common. *Fl.* May—July. ♀.

The flowers have been remarked by Dr. Bell-Salter and Mr. G. Kirkpatrick to be powerfully fragrant.

** *Leaves digitate.*

2. *P. Tormentilla*, With. *Tormentil*. "Stem-leaves ternate those at the base of the peduncles sessile, leaflets lanceolate or obovate-cuneiform inciso-serrate, stem procumbent or ascending dichotomous upwards, achenes wrinkled.

a. "Leaves all sessile acute except those of the root, stem ascending." *Tormentilla officinalis*, L.: *E. B.* t. 863.

β. "Lower stem-leaves stalked obtuse, stem prostrate sometimes rooting, flowers larger." *Tormentilla reptans*, L.: *E. B.* t. 864. *Br. Fl.* p. 124.

In (mostly dry) woods, thickets, pastures, and on heathy, moory ground; everywhere. *Fl.* June—August. ♀.

β. On hedgebanks between Alder moor and Coppid Hall. Parkhurst forest, on the right hand of the brow of the hill, *Miss G. Kilderbee*!

3. *P. reptans*, L. *Creeping Cinquefoil*. *Vect. Five-fingered Grass*. "Stem filiform prostrate creeping, leaves long-stalked, leaflets 5 obovate-cuneiform serrated, peduncles axillary solitary single-flowered longer than the leaf, achenes granulated scabrous."—*Br. Fl.* p. 124. *E. B.* t. 862.

In woods, groves, meadows, pastures, on ditch- and hedgebanks, waste ground, and by waysides; abundantly. *Fl.* June—September. 24.

B. *Petals white.*

*** *Leaves ternate.*

4. *P. Fragariastrum*, Ehrh. *Strawberry-leaved Cinquefoil*. *Barren Strawberry*. Leaves ternate, leaflets obovate deeply serrated silky on both sides, petals obcordate as long as the calyx, seeds wrinkled hairy at the scar, stems procumbent. *Sm. E. Fl.* ii. p. 425. *Br. Fl.* p. 124. *E. B.* xxv. t. 1785. *Curt. Fl. Lond.* i. fasc. 3, t. 30.

In dry woods, pastures, groves, and on hedgebanks; abundantly. *Fl.* March—May. 24.

Root thick, woody, nearly simple, flexuose, creeping, with a dark reddish brown wrinkled bark, clothed at top with the withered footstalks of former leaves. *Stems* several, from the crown of the root, from a few inches to about a span long, round, leafy, decumbent but not rooting,* somewhat ascending, and usually emitting tufts of leaves and flower-scapes at their extremities; covered, like every part of the plant except the root, with fine, spreading, silky hairs, often becoming quite woody. *Leaves* ternate, on very long channelled petioles, the radical ones forming a tuft at the crown of the root, the rest mostly crowded at the extremity of the shoots or decumbent branches; *leaflets* scarcely above an inch long at most, dull green, very soft and hairy, especially along the nerves and midrib underneath, the terminal one cuneato-obovate, very shortly stalked, wedge-shaped and entire at base; the 2 lateral leaflets roundish ovate, nearly sessile, entire below on their inner side only, all strongly but evenly crenato-serrate, the terminal serrature of each leaflet much smaller and shorter than the rest. *Stipules* large, pale and membranaceous, closely combined and sheathing below, cleft above into 2 ovate or ovato-lanceolate, acuminate and diverging lobes, glabrous on their upper surface. *Scapes* lax, mostly longer than the leaves, from the base of which they spring, usually about 2- or 3-flowered, with a small stalked leaf at the base of the filiform variously lengthened *pedicels*. *Flowers* much like those of the Wood Strawberry (*Fragaria vesca*) in size and appearance, erect. *Calyx* subcampanulate, the 5 interior segments broadly ovato-triangular, acute; the 5 exterior (bracts?) much smaller, ovato-lanceolate or elliptical, somewhat keeled, erect. *Petals* pure white (sometimes reddish or flesh-coloured, *Bertoloni*), inversely heart-shaped, opposite the smaller and about as long as the larger sepals, slightly emarginate. *Stamens* converging, not very numerous; *anthers* bright yellow. *Styles* numerous, erect, simple. *Receptacle* very hairy, bright orange and glandular betwixt the styles. *Carpels* numerous, covered by the converging inner calyx-segments.

Often mistaken for the Wood Strawberry (*Fragaria vesca*), of which it has all the characters except the fruit (hence the English name), but it is a true *Potentilla*!

VIII. COMARUM, Linn. Marsh Cinquefoil.

Calyx 10- (or more) cleft, segments alternately smaller. *Petals* 5 (or more), shorter than the calyx. *Achenes* many, minute

* Mertens and Koch say they finally take root, and emit fresh procumbent stems, like the original ones, which from their cæspitose mode of terminating seems highly probable.

tipped with a minute style, inserted on a large spongy permanent receptacle.

1. *C. palustre*, L. *Purple Marsh Cinquefoil*. *Br. Fl.* p. 122. *E. B. t.* 172. *Potentilla Comarum*, *Nestl.*

In spongy turfy or peaty bogs and swampy meadows, in marsh-ditches and drains; not uncommon, but rather local. *Fl.* May, June. *Fr.* July. 24.

E. Med.—In the boggy moors or meadows between Rookley and Northground farms, in several places abundantly. Boggy pasture between Sayuham and Dews Place. Plentiful in various parts of Sandown level, and on the adjacent marshy skirts of Lake common.

W. Med.—Abundant in boggy meadows in the valley of the Medina, about Cridmore &c. Marsh near Easton, in plenty, *Mr. Smooke !!!*

A beautiful plant, by some authors referred to *Potentilla*, from which, indeed, as well as from *Fragaria*, it scarcely differs, except in the spongy, not dry or fleshy receptacle, and is as it were an intermediate genus. *Root* reddish brown, very long, creeping and extremely tough. *Stem* a foot or two in length, round, hairy, procumbent, creeping and rooting at the joints, at length ascending, branched, reddish, and like the root very tough. *Lower leaves* on sheathing petioles, of 6 or 7 ovate or lanceolate, deeply and sharply serrated leaflets, smooth above, pale and downy beneath; *upper leaves* sessile, ternate or quinate, with a pair of ovate stipules. *Flowers* solitary or 2—5 together, purplish brown, handsome but without scent. *Sepals* very unequal, the smaller alternate outer ones strongly reflexed. *Petals* small, much shorter than the calyx, ovate, with a reflexed point. *Anthers* oval, erect, flat, dark purple, like the filaments, bursting along their thin outer edges, deciduous. *Receptacle* conical, hairy. *Styles* purple, inserted laterally on the small oval nuts or seeds, which are quite smooth, purplish, slightly attached to, not imbedded in, the spongy very dry receptacle. *Fruit* erect, much like a moderate-sized strawberry in appearance, but not eatable, more or less completely covered by the dry, persistent, connivent sepals. *Seeds* (nuts) very numerous and crowded, dark red above, yellowish white below, compresso-globose, with an oblique obtuse apex, slightly attached to, but not at all imbedded in the substance of the roundish ovate or oblong, dry, spongy and tomentose receptacle.

IX. FRAGARIA, Linn. Strawberry.

“*Calyx* 10-cleft, segments alternately smaller. *Petals* 5. *Stamens* many. *Achenes* many, minute, tipped with a short style, placed upon a large fleshy deciduous receptacle.”—*Br. Fl.*

1. *F. vesca*, L. *Common Wood Strawberry*. “*Calyx* of the fruit spreading or reflexed, hairs of the peduncles widely spreading, those of the pedicels erect or close-pressed silky.”—*Br. Fl.* p. 121. *E. B. t.* 1524, and *Suppl. t.* 2742.

In woods, groves, on shady banks, pastures, and along hedgerows; common. *Fl.* May—July. *Fr.* June. 24.

Fruit drooping, small, round, bright scarlet, subtended by the spreading or partly reflexed calyx. *Seeds* (achenia) numerous, deep red, smooth and shining, very prominent on the shallow pitted receptacle.

X. RUBUS,* Linn. Bramble. Raspberry.

Calyx 5-cleft. *Petals* 5. *Fruit* superior, of several single-seeded juicy *drupes*, placed upon a protuberant spongy *receptacle*.

* *Stem erect, biennial.*

Group i. SUBERECTI, Lindl. *Stem upright, biennial; leaves pinnate or digitate* (fruit variable in colour).

1. *R. idæus*, L. *Common Raspberry*. Stem prickly-setose, leaves pinnate, leaflets tomentose beneath, flowers drooping, petals erect. *E. B. t.* 2442. *Br. Fl.* pp. 119 and 584.

β. trifolius. Stem shining, leaves ternate.

Thickets and moist heaths, frequent. *β.* Less common. *Fl.* May, June. *Fr.* July, August. *h.*

E. Med. — In a marshy wood near the Medina, above Blackwater, in considerable plenty; in the Parsonage Lynch, Newchurch; Bordwood Lynch; abundantly in a boggy thicket about a quarter of a mile West of Walklands, also in Herringford withy-bed, *W. A. B.* In Appuldurcombe park, *A. Hambrough, Esq.* St. George's Down, *G. Kirkpatrick, Esq.* On the cliff between Foreland farm and Lane-end, Bembridge. In sandy hollows in Moreton-lane, Brading. With pale or amber-coloured fruit, in a withy-bed by Shide Mill, as I learn from a servant of *Dr. Bell-Salter, W. A. B.* Also with pale fruit, on Apse heath.

β. In Moreton-lane, by Brading.

Leaflets 3—7, white beneath. *Fruit* very pulpy, usually scarlet, rarely amber-coloured. *Prickly setæ* usually dark red, pale in the plants bearing amber-coloured fruit. *Plant* spreading by suckers.

As Mr. Borrer finds the Wild Raspberry abundantly in the Sussex forests, there is no reason for supposing it to be otherwise than indigenous to the Isle of Wight, though, like the Red and Black Currant, most plentiful in the colder parts of Britain and the continent. Honest Gerard tells us the fruit is "in taste not very pleasant," an opinion rather at variance with the prevailing one of the present day, and we suspect of his own age also. *W. A. B.*

2. *R. suberectus*, And. *Red-fruited Bramble*. Stem without hairs or setæ round, prickles straight small few or many, leaves pinnate or digitate, leaflets cordate acuminate, flowers erect, petals spreading slightly exceeding the calyx. *E. B. t.* 2572. *Br. Fl.* p. 584. *Fl. Dan.* xii. t. 1992? *W. A. B.*

β. trifolius. Prickles few, leaves ternate.

Boggy heaths and wet places, not frequent. *Fl.* June, July. *h.*

* [It had long been an understanding between our lamented author and his friend Dr. Bell-Salter, that the latter gentleman should supply, when required for publication, the genus *Rubus* for the 'Flora Vectensis.' As subsequently to this promise Dr. Bell-Salter has contributed an abridged synopsis of the genus, published as an appendix to the last edition of the 'British Flora,' the Editors, by quoting from this supplement, and adding the localities he has supplied them with, have been able to carry out the understanding of the author without departing from the uniformity of their plan in the publication of his work. The Editors prefer making this general statement, rather than that the whole genus should be enclosed in brackets or marked as quotations, and the very few remarks or localities recorded by the author they have authenticated with his initials.—Edrs.]

E. Med.—In the dell at Apse Castle, 1840, *W. A. B.* Also about Ninham farm, and Apse heath.

β. With the above, being in this island by far more frequent than the typical form.

Panicle mostly branched. *Petals* white. *Fruit* red, soon drying. *Leaflets* 3—9, glabrous on both sides, pale green.

This species and the following increase abundantly by seed.

3. *R. plicatus*, *W. & N.* *Upright Blackberry*. Stem angular without hairs or setæ, prickles few curved, leaves quinate, leaflets mostly ovate plicate, flowers erect, petals spreading, twice as long as the calyx. *W. & N. t. i.* *E. B. S. t. 2714.* *Br. Fl. p. 584.*

β. *carinatus*. Leaflets lanceolate, carinated.

Moist heaths and boggy places, not rare. β. Rare. *Fl.* May, June. h.

E. Med.—Apse-Castle wood. On Apse heath. In a boggy wood near Wootton, on the road to Cowes.

W. Med.—Near Debourne Gate, *W. Cowes*, *Miss G. Kilderbee*.

β. On Blackpan common.

Panicle usually simple, racemose, with long pedicels. *Petals* white or pale pink. *Fruit* scarcely black. *Leaflets* dark green above, pale beneath.

** Stem arched or procumbent, perennial, rooting at the end.

† Stem destitute of setæ.

Group ii. CORYLIFOLII, Lindl. Stem polished, glabrous or slightly hairy; hairs patent, translucent; leaves digitate-quinate; leaflets pubescent on both sides, pliant. (Fruit black in this and the four following groups).

a. Calyx reflected from the fruit.

4. *R. rhamnifolius*, *W. & N.?* *Buckthorn-leaved Blackberry or Bramble*. Stem angled, prickles equal, lower pair of leaflets small directed backwards, panicle branched. *Borr. Br. Fl. p. 585.*

α. *cordifolius*. Stems decumbent, leaves cordate. *R. cordifolius*, *W. & N. t. v.* *R. rhamnifolius*, *W. & N. t. vi.*

β. *nitidus*. Stem suberect, panicle leafy spreading. *R. nitidus*, *W. & N. t. iv.*

γ. *sylvaticus*. Stem villous, prickles numerous. *R. sylvaticus*, *W. & N. t. xv.* *R. villicaulis*, *W. & N. t. xvii.*

Hedges and thickets, frequent. *Fl.* May, June. h.

E. Med.—In hedges near Ryde. In sunny thickets on the open parts of Sandown and Apse heaths, abundantly.

W. Med.—Hedges near Cowes.

β. In Quarr copse and Whitefield wood, abundantly. Very frequent in hedges about Cowes.

γ. In a hedge at Week's-field, near Ryde.

Stem green. *Petals* white or pale pink.

A variable plant. β. has much the habit of *R. plicatus*; it is however distinctly osculant with α. and γ.

5. *R. macrophyllus*, *W. & N.?* *Large-leaved Bramble or Blackberry*. Stem furrowed slightly hairy, prickles equal few mostly small, leaflets elliptic-acuminate very pliant. *W. & N. t. xii.?* *E. B. S. t. 2625.* *Br. Fl. p. 585.*

β. *Schlechtendalii*. Prickles somewhat stronger, *Bab.* *R. Schlechtendalii*, *W. & N.* t. xi.?

Woods and thickets, frequent. *Fl.* June, July.

E. Med.—Shore copse, near Fishbourne, abundantly. In Whitefield wood. In hedges between Adgestone and Alverstone. *Boheima*, *Albert Hambrough, Esq.*

β. At Adgestone and in Morton lane, by Brading.

Whole plant pale, closely allied to the preceding. *Petals* usually small and white; in β. larger and somewhat pink.

6. *R. corylifolius*, Sm. *Hazel-leaved Bramble or Blackberry*. Stem glabrous often glaucous, prickles unequal, leaflets cordate mostly rugose, lower pair sessile overlapping.

β. *fastigiatus*. Leaflets flat, *R. fastigiatus*, *Bab.*

γ. *Smithii*. Panicle cymose prickly and glandular, *Leighton*. *R. corylifolius*, *E. B.* t. 827.

Hedges and thickets, common. β. Unfrequent. *Fl.* May, June. ½.

E. Med.—In hedges about Ryde, Brading and Bembridge.

W. Med.—In hedges about Cowes and Newport.

β. In a hedge by the path from the Ryde and Ashey road to Whitefield farm.

γ. In hedges at Ryde and Bembridge. Near Gurnet farm, on the road towards Cowes.

Stem decumbent, green or tinted purplish. *Leaflets* often crisped. *Petals* small, mostly white.

b. Calyx embracing the fruit.

7. *R. Salteri*, *Bab.* *Bell-Salter's Bramble or Blackberry*. Stem angled slightly hairy, prickles small, leaflets elliptic-acute, panicle compound. *Bab.* *Br. Fl.* p. 585.

Woods, rare. *Fl.* June. ½.

E. Med.—In Apse-Castle wood, near America cottages, pretty abundantly, and elsewhere in the same wood sparingly.

Whole plant pale green, spreading abundantly by creeping stolons, as well as rooting at the end of the stems. *Petals* small, white.

Group iii. *CARPINIFOLIÆ*. *Stem clothed with patent translucent hairs, and numerous uncinatè prickles; leaves pedate-quinatè or ternatè; leaflets carinatè, their surfaces nearly glabrous and concolorate, strongly veined beneath; panicle subtomentose.*

8. *R. carpinifolius*, *W. & N.* *Hornbeam-leaved Bramble or Blackberry*. Stem arched angular, prickles with broad bases, mostly confined to the angles of the stem, panicle branched, calyx reflexed. *W. & N.* t. xiii. *E. B. S. t.* 2664. *Br. Bl.* p. 586.

β. *roseus*. Stem but little hairy, panicle with a few setæ, *W. & N.* t. xiii.

γ. *corymbosus*. Panicle corymbose prickly, terminal flower subsessile.

Thickets in a sandy soil. β. In woods. *Fl.* June—September. ½.

E. Med.—In Quarr copse, and woods about Haven Street; very abundant throughout the greensand districts in the S.E. of the island. Pagham common. Bleak Down and Alverstone Copse, *Albert Hambrough, Esq.*

β. In Quarr copse. In Apse-Castle wood and about Ninham farm, abundantly.

γ. In hedges about Shanklin and Languard.

Plant bright green. *Petals* mostly light pink, in β . bright rose-coloured.

After the first panicles pass out of flowers, lateral ones continue to form till the close of autumn.

9. *R. Sprengelii*, W. *Sprengel's Bramble or Blackberry*. Stem prostrate round prickly on all sides with slender hooked prickles, panicle corymbose, calyx embracing the fruit. *Br. Fl.* p. 586. *R. Borreri*, *Bell-Salter*, olim.

Heaths and open places, not frequent. *Fl.* June, July. $\frac{1}{2}$.

E. Med.—On Pagham common. On Apse heath and by Ninham farm, in some plenty.

Stem prostrate, often concealed. *Panicles* upright, often appearing to spring from the ground. *Flowers* pale.

Group iv. TOMENTOSI. *Stem* angled, more or less silky with divaricating opaque hairs; prickles silky at the base, mostly confined to the angles of the stem, often in pairs; leaves digitate; leaflets polished above, hoary beneath; panicle tomentose.

10. *R. discolor*, W. & N. *Common Bramble or Blackberry*. Stem arched furrowed subglaucous with minute silky hairs, prickles mostly uncinatè, leaves quinate, leaflets elliptic crenato-serrate usually decurved at the margin. *Lindl. Br. Fl.* p. 586. *R. fruticosus*, *E. B.* t. 715.

β . *thyrsoides*. Silky pubescence obsolete, tomentum of the panicle short. *R. thyrsoides*, *Winm.* ? *R. fruticosus*, *W. & N.* t. vii. ?

γ . *macroacanthus*. Prickles very large, tomentum of the panicle loose. *R. discolor*, *W. & N.* t. xx.

Hedges, woods and heaths, common. *Fl.* June—August.

β . At Bembridge and St. Helens.

γ . In Quarr wood, abundant.

Stem dark. The *petals* vary from pure white to a full deep red. *Leaflets* generally 5, less decurved in plants growing in the shade.

11. *R. argenteus*, W. & N. *Silvery Bramble or Blackberry*. Stem pubescent-tomentose, prickles numerous uncinatè slender, leaves quinate, leaflets obovate cuspidate doubly serrated pubescent-tomentose beneath. *W. & N.* t. xix. *Br. Fl.* p. 586.

β . *macroacanthus*. Prickles large, pungent. *R. macroacanthus*, *W. & N.* t. xviii.

γ . *tenuis*. Stem slender, panicle with lower branches attenuated. *R. discolor*, var. *argenteus*, *Bell-Salter*, olim.

Thickets and hedges, not frequent. *Fl.* July, August. $\frac{1}{2}$.

E. Med.—In a hedge near Whitefield farm, by the bridge-road towards Ryde.

β . Near Whitefield farm, with specimens of normal form.

γ . In a boggy thicket on Black-pan common, near Burnt-house.

Nearly allied to the preceding and following species. *Silky pubescence* more abundant and less close than in the preceding, and glittering white. *Petals* pink.

12. *R. leucostachys*, Sm. *Downy-spiked Bramble or Blackberry*. Stem tomentose, prickles straight, leaves quinate, leaflets acuminate unequally and doubly serrated.

α. Leaves elliptic coriaceous, serratures acute. *Br. Fl.* p. 386. *R. leucostachys*, *Sm.*: *E. B. S.* t. 2631.

β. vestitus. Prickles weak; leaflets orbicular, flaccid, scarcely hairy beneath, tomentose clothing loose. *R. vestitus*, *W. & N.* t. xxxiii. ? *R. vulgaris*, *W. & N.* t. xiv.

γ. argenteus. Tomentose clothing very close, otherwise like *α*.

Common, *α*. and *γ*. in hedges, and *β*. in woods. *Fl.* July, August. *h*.

A variable plant, *β*. being so altered by the effect of shade as to be often taken for a different species. *Stem* dark purple in *α*. and *γ*., green in *β*. *Leaflets* coriaceous in *α*. and *γ*., flaccid in *β*. *Petals* white or pink.

†† *Stem setose*.

Group v. *RADULÆ*. *Stem armed with prickles, aciculi, hairs and setæ on all sides; leaves quinate; leaflets obovate cuspidate acuminate, all stalked; calyx reflexed from the fruit; fruit of many drupes, shining.*

13. *R. Radula*, *W.* *File-stemmed Bramble or Blackberry*. *Stem* striated, prickles unequal passing by gradation into aciculi and setæ, leaflets finely serrated pubescent and strongly nerved beneath, panicle pubescent-tomentose sparingly prickly, sepals ovate-tomentose. *W. & N.* t. xxxix. *Br. Fl.* p. 587.

β. Hystrix. Glands and setæ fewer, leaves less nerved beneath. *R. Hystrix*, *W. & N.* t. xli.

Hedges and thickets, on a sandy soil, not frequent. *Fl.* July, August. *h*.

E. Med.—In the fence dividing the kitchen-garden at St. John's, near Ryde, from the neighbouring wood, but somewhat approaching the variety *β*.

β. More frequent in this island than the normal form. In thickets about St. John's, near Ryde. In Quarr copse, plentiful.

Whole plant pale green. *Sepals* very tomentose, without setæ or leaf-point. *Petals* pink.

14. *R. rudis*, *W.* *Rough-stemmed Bramble or Blackberry*. *Stem* angular, prickles mostly confined to the angles of the stem, hairs, setæ and aciculi equal, leaflets doubly and coarsely serrated prickly beneath, panicle hairy with long prickles and setæ, sepals lanceolate leaf-pointed prickly and setose. *W. & N.* t. xl. *Br. Fl.* p. 587.

β. Leightoni. Prickles of the panicle uncinat. *R. Leightoni*, *Lees*: *Leight. Fl. Shrop.* p. 233.

γ. foliosus. Plant smaller, panicle leafy to the top.

δ. Reichenbachii. Aciculi and setæ few. *R. Reichenbachii*, *W. & N.* t. xxxvii.

Margins of copses, in a stiff soil, frequent. *Fl.* June, July. *h*.

E. Med.—In hedges at Haven-street and Ninham farm. In Morton Lane, near Brading. *Shore Copse*.

W. Med.—Near Cowes, and between Cowes and Newport.

β. Cockleton bog, near Cowes.

γ. Specimens approaching this form, but not fully developed, growing with *β*. at Cockleton bog.

δ. At Spring Vale, near Vernon Villa. In Morton Lane, near Brading.

Stem dark fuscous, in *β*. inclining to green. *Prickles* long, not passing by gradation into aciculi and setæ. *Leaflets* jagged, dark green. *Panicle* large and long. *Petals* small, white.

Group vi. KÆHLERIANI. *Stem armed with numerous prickles, aciculi and setæ on all sides; leaves ternate or quinate, if quinate the lower pair of leaflets sessile; fruit of many drupes, shining.*

15. *R. Kæhleri*, W. *Kæhler's Bramble or Blackberry*. Stem hairy setose with numerous broad-based prickles and aciculi, leaves pedate quinate, leaflets ovate-acuminate pubescent and prickly beneath, sepals lanceolate setose and prickly reflected from the fruit. *E. B. S. t.* 2605. *Br. Fl.* p. 588.

β. *apiculatus*. Stem procumbent, hairs and setæ not numerous. *R. apiculatus*, *W. & N. t.* xxiv.

γ. *foliosus*. Plant very prickly, panicle leafy to the top. *R. Kæhleri*, *W. & N. t.* xxv.

δ. *fusco-ater*. Leaflets rotund, ovate, finely serrated, lower pair overlapping, *Borr.* *R. fusco-ater*, *W. & N. t.* xxvi.

ε. *fuscus*. Prickles mostly confined to the angles of the stem. *R. fuscus*, *W. & N. t.* xxvii.

Woods and thickets. *Fl.* July, August. *h.*

E. Med.—In Quarr copse, near Ryde. About Ninham, near Ryde. Near Wootton-bridge.

W. Med.—Along the road between Cowes and Newport. In thickets about Apes down.

β. In a bog by Ninham farm, near Shanklin.

γ. In thickets on Ninham farm, near Ryde, opposite Quarr wood, are specimens referrible to this variety, though not typical of its full development.

δ. In hedges near Ryde. Near Cockleton bog, *Miss G. Kilderbee*.

ε. On the heathy common about Lynn farm. In Bohemia, *A. Hambrough, Esq.*

Stem very prickly, purplish green. *Leaves* glossy, soft beneath. *Panicle* variable, often much branched. *Petals* white or pale pink.

16. *R. glandulosus*, Bellardi. *Glandulose or Bellardi's Bramble or Blackberry*. Stem hairy setose, prickles unequal, leaves mostly ternate, leaflets oval cuspidate strongly veined beneath, panicle, bracts and sepals very setose, calyx patent after flowering. *Br. Fl.* p. 588. *E. B. S. t.* 2883. *R. Bellardi*, *W. & N. t.* xlv.

β. *Lejeunii*. Leaves unequally serrated. *R. Lejeunii*, *W. & N. t.* xxxi.

Woods and thickets, not frequent. *Fl.* July—September. *h.*

β. This form only yet observed in the island, growing in considerable abundance on a wooded bank between Guildford and Lynn, on the road from Ryde to Arreton.

Stem reddish green. *Leaflets* pale green above, tawny-pale with pink veins beneath. *Inflorescence* with a mossy covering of red glands and setæ. *Sepals* often leaf-pointed. *Petals* rose-coloured.

Group vii. CÆSI, Lindl. *Stems glaucous, with few hairs and setæ; fruit of few drupes, glaucous.* (Fruit blue or bluish).

17. *R. Wahlbergii*, Arrh. *Wahlberg's Dewberry or Bramble*. Stem with a few hairs and glands and numerous thick-based prickles, leaves pedate-quinate, leaflets overlapping pubescent

rugose, panicle leafy tomentose with numerous falcate prickles, sepals patent ovate tomentose and glandular. *Br. Fl.* p. 588.

β. glabratus. Plant nearly without setæ. *R. Grabowskii, Weihe : Bab. Man.* p. 98.

Hedges, rare. *Fl.* June, July. *h.*

In the hedges on the Ryde and Newport road at Binstead. In the hedges by the toll-gate and windmill at Haylands, near Ryde. In the hedges by the roadside at St. Helens, near the Green and thence towards the shore. In hedges throughout the village of Bembridge.

β. Near Bembridge and Yaverland farms.

Stem very prickly, pinkish green. *Leaflets* thick and soft, light green above, pubescent and pale beneath. *Panicle* large. *Petals* bright rose-coloured. *Fruit* often abortive.

18. *R. nemorosus*, Hayne. *Larger Dewberry.* Stem procumbent, leaves quinate, leaflets ovate-cordate acuminate pubescent overlapping, calyx setose, sepals ovate acute. *Br. Fl.* p. 589. *R. dumetorum, W. & N. t. xlv.* *R. cæsius β., Borr.*

Thickets, rare. *Fl.* June, July. *h.*

In a hedge at Grove, between it and Brading.

Petals rose-coloured. *Fruit* glaucous, black.

Intermediate between *R. Wahlbergii* and *R. cæsius*, from the latter of which, though scarcely distinct, it is distinguished by the quinate leaves.

19. *R. cæsius*, L. *Dewberry.* Stem weak, prickles unequal passing by gradation into hairs and setæ, leaves ternate, leaflets oval acuminate, lateral pair lobed externally, calyx setose, sepals ovate-lanceolate cuspidate. *E. B. t. 826. W. & N. t. xlv.* *Br. Fl.* pp. 120 and 589.

β. Pseudo-cæsius. Leaflets all lobed, fruit mostly abortive. *W. & N. loc. cit.*

γ. tenuis. Nearly destitute of hairs and setæ.

δ. ferox. Prickles strong, uncinatæ.

Hedges and sides of streams, not frequent. *Fl.* June—September. *h.*

E. Med.—Hedges about St. Clare, near Ryde. In Quarr copse. Hedges about Brading. Hedges at Ventnor.

W. Med.—In the copses at Apes-down farm, plentifully. In the great plantation at Westover. In Swainston park the ground is in some places covered with a mat of dewberries, *W. A. B.*

β. In Morten Lane and in the wet hedges about Adgestone, both near Brading.

γ. In Quarr wood. In a hedge at Ventnor.

δ. On the road from Newport to Swainston, in a hedge nearly opposite Apes farm.

Stem purplish green. *Leaflets* light green and soft. *Sepals* often leaf-pointed. *Petals* white or pale pink. *Fruit* glaucous, often blue.

Tribe IV. ROSEÆ.

"Fruit formed of numerous small dry nuts inclosed in the fleshy tube of the calyx."—*Bab. Man.*

XI. ROSA, Linn. Rose. Briar.

Calyx urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. *Petals* 5. *Stamens* many. *Achenes* numerous, hairy, fixed to the inside of the calyx.

* *Shoots setigerous ; prickles scarcely curved.*

1. *R. spinosissima*, L. ? *Burnet-leaved Rose*. "Prickles crowded unequal mostly straight intermixed with setæ, leaflets small simply serrated their disk eglandulose, calyx simple, fruit nearly globular."—*Br. Fl.* p. 128. *E. B. t.* 187. *R. pimpinellifolia*, L.

On dry sandy heaths, moors and pastures, chalky or sandy banks, by roadsides, and in loose sand by the sea, in many places abundantly. *Fl.* May—July. *Fr.* September. $\frac{1}{2}$.

E. Med.—On and about Staplers Heath, in plenty, and along the road between Wootton and Newport. By Fattings farm, and about the race-course. On Yarbury hill.

W. Med.—Woods and banks by the shore between Yarmouth and Newtown. In and about Parkhurst forest. Common in various places in Freshwater parish, as about Colwell, near Alum Bay, &c. Heathy ground about Kingston, not uncommon. On the heathy slope of Buccombe down, towards Apes down and Rowledge.

Fruit varying from the size of black currants to that of a cherry, purplish black when ripe, as are their clavate peduncles, subglobose or subovoid, "in some varieties obovate, in others urceolate" (*Leighton*); firm and mealy rather than pulpy when mature, with a deep purple juice, quite smooth or glabrous, crowned with the spreading or deflexed and persistent calyx, the fleshy base of which forms a shallow ring or neck to the fruit. *Seeds* blood-red.

There is a rose apparently of this species, but much taller, abundant in a hedge by a cottage facing Apse heath, by the road from Newchurch to Shanklin and Sandown, 1839.

** *Shoots mostly without setæ.*

† *Leaves glandulose.*

a. Prickles uniform or nearly so. Setæ few or none.

2. *R. tomentosa*, Sm. *Downy-leaved Rose*. "Prickles mostly uniform straight or curved, leaflets doubly serrated downy glandulose, calyx-segments copiously pinnate."—*Br. Fl.* p. 130. *E. B. t.* 990. *R. scabriuscula*, *Winch.*: *E. B. t.* 1896 (fig. only?).

In hedges, thickets, and amongst bushes in various places. *Fl.* June, July. $\frac{1}{2}$.

E. Med.—About Kennerley heath, and Bohemia. Field-hedge E. of Budbridge farm. In Whitefield wood.

A small, upright, rigid bush, 4—6 feet high, with round, smooth, olive-green or brownish irregular branches. *Prickles* nearly uniform, but little curved, often, as Sir J. Smith remarks, two together at the base of the leaves, the rest scattered. *Leaves* of 5—7 ovate leaflets, of which one of the lowermost pair is sometimes wanting, ovate, acute, doubly serrate, the serratures glandular, of a dull grayish or whitish green, very soft and downy, with a resinous smell when bruised. *Stipules* linear, fringed with shortly stalked glands. *Flowers* solitary (as in my specimens), usually 2 or 3, seldom 4 (*Sm.*), rather small, bright red, fragrant. *Peduncles* hairy, with a few small prickles. *Calyx* (receptacle of Woods) ovate or elliptical, densely bristly, its sepals villous within, thickly beset with glands on the outside, with long spreading points, and generally described as copiously pinnate, which is by no means the case in my specimens, in which the pinnæ rarely exceed a single pair, with an odd one, or two pair at the most. *Petals* small, bright red, white towards the claw. *Styles* numerous, quite distinct, very short, spreading hemispherically. *Stigmas* broad, flat. *Fruit* ovate or somewhat globular, more

or less bristly, bright scarlet, with a dry pulp and numerous large bony seeds, crowned with the persistent sepals.

3. *R. micrantha*, Sm. *Small-flowered Sweet Briar*. "Prickles uniform uncinatè, leaves doubly serrated hairy glandulose beneath, calyx-segments and pinnæ elongated deciduous, fruit small elliptical and ovate, ramuli sparingly setigerous." — *Br. Fl.* p. 130. *E. B. t.* 2490.

In hedges, thickets, borders of woods and bushy pastures; not uncommon. *Fl.* June, July. $\frac{1}{2}$.

E. Med. — Between Ryde and Newport, *Rev. G. E. Smith*.

W. Med. — Abundant in the great fir and beech plantation on the downs near Westover. Near Shorwell, *Rev. G. E. Smith*.

Fruit (pome) scarlet or orange-red, about $\frac{1}{4}$ of an inch in length, elliptical-oblong, more or less contracted above into a sort of neck, (mostly?) smooth (without setæ) at the base.

b. Prickles various, intermixed with setæ.

4. *R. rubiginosa*, L. *Sweet Briar. Eglantine*. "Prickles numerous, larger uncinatè, smaller subulate, leaflets doubly serrated hairy glandulose beneath mostly rounded at the base, calyx-segments and pinnæ elongated persistent, primordial fruit pear-shaped." — *Br. Fl.* p. 130. *E. B. t.* 991. *Jacq. Fl. Aust. i.* 31, t. 50.

In thickets, hedges, borders of woods and fields, and in open bushy pastures; occasionally. *Fl.* June, July. $\frac{1}{2}$.

E. Med. — [Border of a copse on Bembridge-lodge property at Bembridge, *A. G. More, Esq.* — Edrs.]

W. Med. — In a pasture-field at the foot of the great plantation of fir-beech, &c., on the slope of the down at Westover, in considerable plenty. In a field near the Yar, and almost facing Freshwater farm, a single bush only.

Fruit (pome) bright orange or scarlet, about as long as the last but much broader, the primordial or central one of each cluster more or less pear-shaped, the rest ovate or subglobose, more or less setigerous or quite smooth. *Seeds* large.

†† *Leaves eglandulose*.

a. Styles distinct, included or nearly so.

5. *R. canina*, L. *Dog Rose. Hip or Hep*. "Prickles uniform hooked, leaves naked or slightly hairy, their disk eglandulose, calyx-segments fully pinnate deciduous, styles not united, shoots assurgent." — *Br. Fl.* p. 131. *E. B. t.* 992.

Everywhere in woods and copses, on hedgebanks, by roadsides and borders of fields, &c. *Fl.* June, July. $\frac{1}{2}$.

b. Styles united in a column, mostly exserted.

6. *R. systyla*, Bast. ? *Close-styled Dog Rose*. "Prickles uniform uncinatè, leaves simply serrated, their disk eglandulose, calyx-segments sparingly pinnate deciduous, styles united hairless, shoots assurgent." — *Br. Fl.* p. 131. *R. collina*, *E. B. t.* 1895 (excl. syn.)

In hedges, thickets and borders of woods. *Fl.* June, July. $\frac{1}{2}$.

E. Med.—In Whitefield wood, along the road to Brading; plentiful in Steyn wood, near Bembridge; near Haven-street, *Dr. Bell-Salter* !!

7. *R. arvensis*, Huds. *Trailing Dog Rose. Corn Rose*, according to Huds.) "Prickles uncinatè, those of the ramuli feeble, leaves simply serrated deciduous (glaucous beneath) their disk eglandulose, calyx-segments sparingly pinnate deciduous, styles united hairless, shoots trailing."—*Br. Fl.* p. 131. *E. B.* t. 188.

In hedges, thickets, copses and the bushy borders of fields; in many parts of the island, abundantly. *Fl.* June, July. $\frac{1}{2}$.

E. Med.—In Whitefield wood, along the road to Brading. Plentiful in Steyn wood, near Bembridge.

W. Med.—Plentiful at Brixton, between the village and the Chine. Hedges about Farringford House, and at the foot of Freshwater down, as indeed in most parts of that vicinity, abundantly.

Tribe V. *POMEÆ*.

"Fruit a 1—5 celled pome."—*Bab. Man.*

XII. CRATÆGUS, *Linn.* Hawthorn.

"Calyx-segments short, acute. Petals large, roundish. Styles 1—5. Fruit oval or round, concealing the upper end of the cells, which are bony."—*Br. Fl.*

"Gives not the hawthorn bush a sweeter shade
To shepherds, looking on their silly sheep,
Than doth a rich embroider'd canopy
To kings that fear their subjects' treachery?"

Third Part of King Henry VI., act 2, sc. 5.

1. *C. Oxyacantha*, L. *Common Hawthorn. Whitethorn or May*.—*Fr. Hogiles or Hogails*, Vect. "Spiny, leaves glabrous cut into 3 or 5 deeply serrated segments cuneate at the base, flowers corymbose, calyx not glandular, styles 1—3."—*Br. Fl.* p. 132. *E. B.* t. 2504.

β . Style solitary. *C. monogyna*, *Jacq.*

γ . Fruit larger, elliptical-ovoid. *C. Oxyacantha*, *Jacq. Fl. Aust.* iii. t. 292, 2? *Mespilus Apii folio sylvestris, folio et fructu majore, Dillw. in Ray's Syn.* p. 454.

δ . Fruit and peduncles tomentose. *C. eriocarpa*, *Lindl. Woolly-fruited Thorn.*

Everywhere planted for fencing, but abundantly wild in woods, thickets, bushy pastures, fields, &c. *Fl.* May, June. *Fr.* September, October. $\frac{1}{2}$.

β . Woods and thickets everywhere; the most frequent, and I believe the only form with us, as regards the number of the styles.

γ . In hedges, not uncommon. Plentiful between Yarmouth and Thorley, on the right hand side of the road just beyond the little bridge. Near Coppid Hall.

δ . Pelham woods, between Steephill and St. Lawrence, frequent, *W. Wilson Saunders, Esq. !!!* In Luccombe landslip, *Idem.* Near Bembridge. More frequent than the glabrous-fruited kind.

A tree, when left to itself, from 20—30 feet or even more in height, with a fastigiate or pyramidal mode of growth, sometimes a rigid thorny shrub of 6—10 feet, the bark of the smaller branches and on the stem of young trees very smooth, the former in the wild state mostly armed with sharp spines, terminating the lateral shoots, but these, in old trees at least, are sometimes wanting. Leaves in

fascicles of 3, 5, or 6 together, broadly ovato-elliptical or nearly orbicular, finely, unevenly and sharply serrated, bright shining green above, turning black in drying, very downy when young, afterwards a little hairy only on the margins and along the principal ribs beneath, as also on the upper side of the rather long-grooved petioles, at the base of which are a pair of long, filiform, caducous stipules. *Flowers* in corymbose downy clusters, terminal or on short, leafy, lateral spurs, white, rather unpleasantly scented, about an inch in diameter. *Calyx* tomentose, the segments lanceolate, acute and spreading, much shorter than the obovate or roundish entire petals, with short abrupt claws. *Stamens* about 20; *anthers* bright purplish pink, 2-lobed, attached to the filaments by a fine point on the latter. *Styles* 5, erect, greenish, contorted: *stigmas* flat (not acute, as Smith describes) glandular. *Fruit* 4 or 5 lines in diameter, deep scarlet or purplish red (coccineus) depressed, globose or subovoid, umbilicate and crowned with the flat persistent calyx, smooth, shining, glabrous or downy, mostly 1-celled. *Seed* large, rugose, nearly globular, in the midst of a mealy insipid pulp.

The var. γ . differs in no respect from the common form, except in having fruit of nearly twice the usual size, and of a more oblong figure, but even in these respects, as well as in the lobing of the leaves, there exists no well-drawn line of demarcation.

The var. δ ., which is no doubt the *C. eriocarpa* of Lindley, was pointed out to me by Mr. W. Wilson, in Pelham Wood, where it varies extremely in the degree of woolliness of its berries and their stalks, even in one and the same bunch. The leaves, which are nearly smooth, are inclined to be simply trifid rather than 5-lobed, but they often assume the ordinary form of the species; they are also generally inclined to be more deeply incised.

XIII. PYRUS, Linn. Pear. Service. Apple.

Calyx of 5 small segments. *Petals* 5, large, roundish. *Styles* 2—5. *Fruit* fleshy, with 5 cartilaginous or coriaceous, 2-seeded.

* *Leaves* simple, undivided.

1. *P. communis*, L. *Wild Pear-tree*. *Iron Pear-tree*. "Leaves simple ovate serrated, peduncles corymbose, fruit turbinate, styles distinct."—*Br. Fl.* p. 133. *E. B.* t. 1784. *Fl. Dan.* xii. t. 2118.

β . *Leaves* ovate, very distinctly acuminate. *P. commun.* var. *P. Achras*, *Gartn.*?

In woods, thickets and bushy places, here and there sporadically, but apparently indigenous; more frequent in hedges from seeds of the cultivated varieties conveyed by accident. *Fl.* April, May. γ .

E. Med.—In one or two places close to Ryde, in hedges, but from being kept trimmed the plants are not easily seen in them. Hedge by Little Smallbrook farm, only one specimen, now destroyed. A solitary very thorny bush on the top of the hill by America. A solitary bush in the hedge on the left a little beyond the Oakfield inn, by Ryde; also another, as a very low stunted bush, on the Dover. Two or three trees in a hedge between Preston farm and Westridge. Near Queen Eower, *Mr. Loe*, 1843. A very large and old tree in the wood immediately opposite St. John's House, at least 40 feet high, but as it is destitute of thorns it may well be questioned whether the tree may not have originated from seeds of some cultivated pear; the large size of the leaves too supports this opinion. Between Ryde and Brading, near Whitefield wood, *Dr. Bell-Salter*.

W. Med.—A small-leaved thorny bush near Eades's. A tree of 16 or 18 feet high grows in a hedge by a little farm between Medham brickfield and the Half-way house. In Symington copse, a tolerably large flowering tree, as also a young one of the same species.

β . A single tree by the roadside from Ryde to Ashley, not seen in flower or fruit. In the grounds at St. John's, a small pyramidal tree, and very thorny.

A tree, in some places of 30—50 feet in height, of a fastigate or pyramidal form, the branches at first erect, afterwards drooping. Here it commonly forms a bushy very rigid shrub, of 6—8 feet high, branched from the base, the bark of a dark reddish brown, the branches and lateral leafy shoots ending in a sharp spine, which disappears by cultivation. *Leaves* much smaller than in the garden varieties, either scattered or 3 or 4 together, on short lateral shoots, broadly ovate, elliptical or nearly orbicular, finely, evenly and sharply serrated, when young downy beneath and fringed with soft white hairs, afterwards glabrous, bright shining green, turning black in drying, on rather long grooved petioles: sometimes the leaves are quite entire, and otherwise variable in form. *Stipules* linear filiform, in pairs, deciduous.

2. *P. Malus*, L. *Wild Apple- or Crab-tree*. "Leaves ovate acute serrated, flowers in a sessile umbel, styles combined below, fruit globose."—*Br. Fl.* p. 133. *E. B.* t. 179.

β. Leaves, petioles, calyx-tube and corolla very large; petals broad, white within, red outside; fruit and fruit-stalks downy. *P. M. sativa*, *Leighton, Shrop. Fl.* 527. *Reichenb. Fl. Exc.* 4067. *Huds. Fl. Angl.* β. p. 217?

Extremely common and truly wild over most parts of the island, in woods, thickets, copses, hedgerows, and rough bushy places.

β. By the roadside between Aldermoor and Coppid Hall. (Vide *Leighton, Shrops. Flora*, loco cit.)

"Spring comes anew and brings each little pledge
That still, as wont, my childish heart deceives;
I stoop again for violets in the hedge,
Among the ivy and old withered leaves;
And often mark, amid the clumps of sedge,
The pooty shells I gathered when a boy:
But cares have claimed me many an evil day,
And chilled the relish which I had for joy.
Yet when Crab blossoms blush among the May,
As erst in years gone by, I scramble now
Up 'mid the brambles for my old esteems,
Filling my hands with many a blooming bough;
Till the heart-stirring past as present seems,
Save the bright sunshine of these fairy dreams."

Clare, Rural Muse, p. 129.

A small tree or often a bushy shrub, from 6 or 8 to 10 or 15 feet high, much and irregularly branched, the branches short, spreading, the older ones very rugged and uneven, forming a roundish head. *Leaves* in fascicles at the ends of the branches and of the numerous short lateral spurs, bright pale green and glabrous or nearly so above, paler and finely downy beneath, sometimes tinged with brownish red, variable in form and size, ovate, elliptical or roundish, obtuse, pointed or acuminate on the same branch, not at all lobed or divided, often a little shining, finely and evenly crenulato-serrulate, the serratures often tipped with a small gland or mucro. *Flowers* in simple, erect, terminal and lateral, sessile umbels, leafy at the base, large, white more or less tinged with a blush-red, pleasantly but slightly scented, bright purple in the bud. *Peduncles* somewhat compressed, about an inch long, purplish, downy (or glabrous, *Koch*) in my specimens, mostly beset with two or three wart-like glands. *Fruit* in the specimens before me nearly globular, clustered, on short downy stalks, yellowish green, with a tinge of red, umbilicate, downy at each end, but like the cultivated apple subject doubtless to great variation in shape, colour and flavour.

**** Leaves simple, lobed or cut.**

3. *P. torminalis*, Sm. *Wild Service-tree*.* Leaves nearly glabrous incised somewhat wedge-shaped rounded at the base unequally 5—7 lobed, lobes serrated acute the two basal ones divaricate, panicle corymbose its branches together with the calyx and claws of the petals tomentose, fruit oval dotted. *Sm. E. Fl.* ii. p. 363. *Br. Fl.* p. 133. *E. B. v. t.* 298. *Jacq. Fl. Aust.* v. t. 443.

In woods and copses, rarely in hedges; frequent in various parts of the plain country North of the central chalk range, scarcely found on its South side or much above the sea-level. *Fl.* May, June. *Fr.* October, November? $\frac{1}{2}$.

E. Med.—Most abundantly in the wood at the West side of the mouth of the Wootton river, forming in some parts no inconsiderable portion of the underwood. In Quarr copse, not unfrequent. Common along the sea side of Shore copse. Stroud wood. Hedge near Coppid Hall. A single rather fine tree in a field near Knighton farm. Woods at the back of Norris castle. Wood (Huntwithy copse?) by the Medina, just above the Rope-walk at E. Cowes. Firestone copse, and near Haven-street. A tree or two in Bordwood forest. Plentiful in Brock's copse, near Whippingham. All over Briddlesford wood in great abundance, prevailing almost as much in the form of a tree as that of underwood. At Feruhill, and between that and Woodhouse, frequent.

W. Med.—Plentiful in Nun's wood, by Ningwood.

A handsome tree, of considerable stature and rounded or pyramidal outline, the principal branches with an erect tendency, the young leaves hoary with silky hairs, the scales of their buds yellowish, glutinous and fringed with glands. *Leaves* 3 or 4 inches long and nearly as many wide, on rather long rounded and downy petioles, firm, deep shining green above, slightly downy on both sides, most so when young and on the under surface, deeply cut into 5 or 7 acute, sharply serrated, unequal lobes, the 3 terminal ones more or less confluent or indistinct, and as well as the middle pair pointing forwards, the 2 basal lobes largest, widely spreading or divaricate, rounded or sometimes slightly cordate behind at the base. *Petioles* downy, rounded. *Stipules* none. *Flowers* in loose, panicked, erect corymbs, not very numerous, cream-coloured, unpleasantly scented, their pedicels and branches of the corymb very woolly. *Calyx* tomentose, sepals small, acute, with a few brownish glands on their margin. *Petals* villous within near their claws. *Anthers* cream-coloured. *Styles* 2 in my specimens (3, 4, or 5 in the same panicle, *Sm.*), hairy at the base. *Fruit* 6 or 8 lines in length, roundish pear-shaped, depresso-umbilicate, a little downy at both ends, at first of a russet-colour, very hard and austere, but when ripe chocolate-brown spotted with pale dots, soft, mealy and agreeably acid, much resembling medlars in taste (or with much of the flavour of tamarinds): *cells* 2—5, closed at top, each with a solitary, ovate, uneven seed; (in all my specimens the pome is 2-celled, with one of the cells abortive).

The fruit is well known in Sussex by the name of Checquers, from its speckled appearance, and sold both there and in this island, in the shops and public markets, tied up in bunches, principally to children. At Ryde they go under the name of Sorbus berries, but are not in much request, a fact by no means surprising

* The name *Service*, applied to the tree and its fruit, is, I suspect, derived from *Cerevisia* or *Cervisia*, a liquor prepared from grain (*Cerealia*) by the ancient Gauls, and analogous to our beer, of which beverage a kind has been brewed time out of mind from the berries of some tree of the present genus, called *Sorbus* by the ancients, "quod ejus succum sorbere solent." The Welsh prepare a similar drink at this day from the fruit of the Mountain Ash, called *Sorbus sylvestris* by many of the older writers on plants.

when we consider the twofold interpretation implied in the specific name, by some alleged to bear reference to the efficiency of these berries in cases of dysentery; by others, with whom, like Withering, we are from experience compelled to coincide, pronounced highly befitting a fruit qualified to cause rather than cure the disease in question. The leaves fade into the richest tints of red or purple before they fall.

The largest Wild Service-tree in the island with which I am acquainted stands in Quarr copse, about 20 yards from the Binstead entrance, on the left hand, and perhaps a dozen yards from the main path, overhanging a deep hollow. The girth of this tree at about 2 feet from the ground I found to be 6 ft. 11 in.; at 3 feet it measured 5 ft. 6 in.; and at 5 feet, 5 ft. 2 in.: its height I estimate at little under 40 ft.; the large, rounded, oak-like head, spreading limbs and leaning trunk render it a very picturesque object, and especially so when clothed in the gorgeous covering of autumn. The specimen is probably of great age, and, though flowering freely, fruits but sparingly. Trees sufficiently large or old for bearing are indeed seldom to be met with in our woods, from its being cut periodically with the copse-wood.

This species has long been and still is strangely confounded with the true Service-tree (*P. domestica*), a very different kind, with much larger, pear-shaped fruit, and pinnated leaves like those of the Mountain Ash, but which there is no reason to believe was ever found wild in Britain, and certainly is not so with us, though described as common in the Isle of Wight, our *P. torminalis* having been uniformly mistaken for it, and the error perpetuated by the similarity of names, and unscrutinizing habits of compilers.

The Wild Service-tree is not a native of either Scotland or Ireland.

4. *P. Aria*, Sm. *White Beam-tree*. Vect. *Whipcrop*, *White Rice*.* "Leaves ovate serrated cut or pinnatifid or partly pinnate white and downy beneath, flowers corymbose, fruit globose." *Br. Fl.* p. 134. *E. B.* t. 1858.

In high, rocky, precipitous woods and elevated chalky thickets; not unfrequent in East Medina; very rare in West Medina and in the flatter parts of the island generally. *Fl.* May, June.

E. Med.—Woods near the Priory, sparingly. In Luccombe copse and other high woods along the road from Shanklin to Bonchurch. Eagle-head and Bloodstone copses. On the rocks overhanging East end at its entrance near Rosecliff cottage, and plentiful along the brow of the wooded steep called Hatchet Close or Cowpit Cliff, between Shanklin and Cook's Castle, in both stations as a tree, truly wild and springing from the crevices of the rock, with the trunk and roots singularly contorted. Wood by America. Youngwood's copse, near Alverstone, and where there is one tree with a regular rounded head and of considerable size. Common in a copse on the northern side of Wroxall down, about Wroxall farm. Near Brading, *Mr. S. Woods* in *Bot. Guide*. A solitary tree in the hedge on the right hand side of the road a short distance from the 'Star' inn at Rookley, towards Bleak Down.

A large shrub or small tree,† with a smooth reddish brown bark, and straight

* The White Rice of our country people, from the silvery colour of the leaves beneath, and its usually low stature, Rice being a Hampshire term for brushwood or undergrowth, doubtless from the German or Teutonic *Reis*; the same orthography should perhaps be adopted in the English. The long, straight and very tough shoots are cut for whip-handles by waggoners.

When in the S. of Ireland in 1842, this species was shown to me as the Service-tree by the boatmen on the Lakes of Killarney, where neither the true Service (*P. domestica*) nor the Wild Service (*P. torminalis*) of this island are indigenous.

† A tree of *P. Aria* in Youngwood's copse measured, in 1846, at 3½ feet from the

upright branches, the extremities of which, as well as the short flowering shoots, are extremely brittle, though the older wood is tough and pliant; for this reason the adventurous explorer of the craggy and precipitous localities in which it most luxuriates must cautiously avail himself of its assistance in climbing the steep ascent. *Leaves* mostly fascicled, 3, 4, 5, or more together, on short lateral spurs, a few at the extreme downy tips of the young branches alternate; ovate, obovato-elliptical or oblong, cuneate at the base or a little rounded, never cordate, coarsely, sharply and unequally serrate, often doubly so, with a tendency to become lobed, or in one variety (*P. pinnatifida*, Ehrh.) even pinnatifid; from 3 to 6 inches long and from $1\frac{1}{4}$ to $3\frac{1}{4}$ inches wide; above bright green, soft and somewhat hoary with fine, close, cottony pubescence, which easily rubs off; beneath silvery, white and tomentose, with the same but far more copious pubescence as on the upper surface, not removable by friction; the mid-rib and the many straight parallel ones very prominent and rounded. *Petioles* very short, tomentose, nearly cylindrical. *Stipules* lanceolate, deciduous (*Sm.*!) *Panicles* terminal on the branches and lateral spurs, corymbose, convex, leafy at the base, much compounded, the branches tomentose, erect and unequal, the lowermost remote. *Flowers* numerous, white or cream-coloured, above $\frac{1}{4}$ an inch in diameter, not unpleasantly scented. *Pedicels* very unequal, woolly, and furnished at their base and about their middle with one or two long, subulate, deciduous bracts. *Calyx* densely cottony, with distant, triangular, acuminate, green segments, much shorter than the 5 roundish, obovate, very concave, entire petals, which are furnished with a tuft of long woolly hairs just above their very short abrupt claws. *Stamens* erect, very unequal, their white filaments and cream-coloured anthers glabrous. *Styles* 2 in all my specimens, a little spreading at their summits, much shorter than the outer stamens, thick, angular and glabrous; stigmas greenish, depresso-orbicular. *Germen* shaggy. *Fruit* (pomae) $\frac{1}{4}$ an inch long, subglobose, flattened at top, of a yellowish, orange or scarlet-colour, sprinkled with a few whitish dots, more or less lanuginose at each end, as are their peduncles, with mouldy-looking pubescence; 2, 3, or 4-celled, the cells cartilaginous, closed at the summit. *Seeds* (pyrena) mostly 2 in each cell, dark brown, erect, oblong-angular and hollowed on the inner side. *Pulp* yellowish, mealy, acid and astringent.

*** *Leaves pinnate.*

5. *P. aucuparia*, Gært. *Mountain Ash*. *Quicken-tree*. "Leaves pinnated usually glabrous when old, leaflets serrated, flowers corymbose, fruit small globose."—*Br. Fl.* p. 133. *Sorbus*, *E. B.* t. 337.

In mostly hilly or rocky woods; very rare and perhaps not really indigenous.* *Fl.* May, June. *Fr.* August, September. $\frac{1}{2}$.

E. Med.—In a wood called Stile-close copse, between Wootton bridge and Newport on the left a little beyond Fernhill, very sparingly, 1839. Hide copse or Great Hill copse, by America, rather more frequently, and a solitary sapling tree by the brook in the dell at Apse Castle (called, I believe, Tinker's Hole), where it certainly was never purposely planted. Several trees at Apse Castle, 1846. Amongst the rocks in Luccombe landslip, but very sparingly.

ground, 3 feet $8\frac{1}{2}$ inches. The tree is not above 17 or 18 feet in height, with a rounded spreading head, the trunk dividing, at 3 feet from the ground, into several stout arms.

* I have observed the Mountain Ash in the copses about Bishop's-Waltham, where it is certainly indigenous, though, as in this island, it is not allowed to escape the periodical cutting of the wood, and hence none but very small stocks are to be met with wild. I have also found it plentifully at Shidfield, near Wickham, in the copse where *Convallaria majalis* grows, thus proving it to be a genuine native of the county, and probably also of this island, of which I had previously some doubt.

A very handsome small tree of regular outline when allowed to take its natural form, with a light gray smooth bark, and round, glabrous, reddish brown branches. *Leaves* alternate, imparipinnate, of about 7 pairs of oblongo-lanceolate sessile leaflets, bright green above, whitish or grayish and finely downy beneath when young, but at last becoming smooth on both sides, deeply and sharply mucronato-serrate, entire and unequal at the base. *Stipules* roundish or semicircular, serrato-dentate, caducous, sometimes with long points. *Panicles* lateral and terminal, corymbose, flattish or slightly convex, the branches downy, leafy beneath the principal ramifications. *Bracts* subulate, coloured, deciduous. *Flowers* very numerous, the size of those of *Spiræa Ulmaria*, white or cream-coloured, with a strong sweetish but unpleasant scent. *Calyx* much shorter than the petals, in 5 erect greenish segments, margined with a few reddish brown glands, the tube villous. *Petals* roundish or obovate, entire, concave, with a short claw. *Stamens* about as long as the petals; *filaments* and *anthers* white. *Styles* 3, erect, very woolly at the base; *stigmas* yellowish.

Order XXV. ONAGRACEÆ, Juss.

"*Calyx-tube* adnate with the *ovary* entirely or in part; *limb* 2- or generally 4-lobed, the lobes valvate in æstivation. *Petals* 2, generally 4, twisted in æstivation, arising from the mouth of the calyx. *Stamens* inserted into the calyx, and twice as many as its lobes, or fewer. *Ovary* of 2—4 cells, often crowned by a disk. *Style* filiform; *stigma* capitate or lobed. *Fruit* a berry, or dry and usually dehiscent. *Seeds* without albumen.—Herbs or shrubs. *Leaves frequently opposite.*"—*Br. Fl.*

I. EPILOBIUM, Linn. Willow Herb.

Calyx superior, 4-parted, deciduous; the *sepals* not cohering nor reflexed. *Petals* 4. *Capsule* linear, prismatic, quadrangular, 4-celled, 4-valved, many-seeded. *Seeds* crowned with a tuft of hairs.

The species of this genus are very widely dispersed, being found in all quarters of the globe, but most numerous in the colder climates or in alpine regions. Flowers almost always pink or purple, very rarely (as in *E. luteum*) yellow.

* *Flowers irregular, stamens and style declined.* Chamænerion, Tourn.

1. *E. angustifolium*, L. Rose-bay Willow-herb. French Willow. Persian Willow. Tame Withy,* Vect. Leaves scattered linear-lanceolate veined glabrous, flowers irregular subspicate, style and stamens declined.

α. Pods short, leaves flat and spreading, flowers larger.

β. Pods long.

In moist or swampy woods and thickets, on damp shady banks and pastures, but not commonly met with. *Fl.* July—October. *Fr.* September, October. 2.

E. Med.—On a high bank by the pathside between Luccombe and East End, towards Rose-cliff Cottage, sparingly and almost choked by tall weeds and bushes. Plentiful in a willow-bed on Sandown marshes, just at the edge of Lake common.

* Tame Withy—*tame*, i. e. cultivated or domesticated; the plant being one of the commonest ornaments of cottage-gardens.

A few specimens in Alverstone lynch. In considerable abundance under trees in a plantation at the foot of Hatchet-close Cliff, but does not flower there. In a boggy pasture between Fullford and Perretton farms, in great plenty, 1840. On a moist bank near the church at Bonchurch, probably an escape from the grounds close by. In profusion on the Wilderness. In several parts of Bordwood lynch, 1841. In the wood near Cook's Castle, very near the Castle, on the left hand of the road winding up the hill from the side facing Appuldurcombe, *H. C. Watson, Esq.*, in litt., 1840. Between Ryde and Sandown, in woods? *Rev. G. E. Smith*. Between Ryde and Brading, but the spot not noted, *N. B. Ward, Esq.*, probably the same station as the last.

β. Abundant amongst the furze on the S.W. slope of Yarbury Hill, near Niton, but does not always flower there. In a small wet thicket by a moory meadow a little W. from Blackwater mill, in plenty (probably this form).

Root creeping extensively, white, cylindrical and soft. *Stem* erect, 3—6 feet high or even more, rounded, smooth, leafy, red or purple. *Leaves* alternate or scattered, various in size and breadth, lower ones lanceolate, 6 or 7 inches long and 2 inches wide, those higher up narrower and smaller; all sessile, glabrous, dark green above, glaucous beneath, entire or with a few obscure glandular serratures, their surface waved or undulated, with the margins a little deflexed, veined at right angles to the very prominent often reddish midrib. *Flowers* in a long, leafless, almost spiked raceme, stalked, bright purplish pink, smaller and deeper-coloured in my wild specimens than is usual in gardens, sometimes white, produced in succession throughout the latter part of summer and autumn. *Sepals* linear-lanceolate, acute, coloured, forming a cross, the 3 upper ones equal, approximate, nearly straight, the points of the 2 lateral curving a little upwards, the lower segment longer than the rest and bent backwards, like the spur of some *Orchis*. *Petals* broadly obovate, about as long as the calyx, slightly emarginate, veined and wavy, suddenly contracted into the very narrow claw. *Stamens* spreading, bent downwards; their *filaments* enlarged and furrowed at the base; *anthers* oblong, bursting along the front of each cell; the *pollen* of copious pale bluish or greenish angular granules. *Style* strongly deflexed, placed on a green nectariferous gland, glabrous, excepting just beneath the deflexion, where it is surrounded by a belt of white hairs; *stigma* 4-cleft, bright purple, the segments obtuse and twisted together. *Capsules* about 2—3 inches long, erect, linear, furrowed and truncate, reddish, a little canescent with close-pressed down, sometimes warty along the angles. *Seeds*,—2 ranked in each cell, yellowish, oblong, wrinkled, glabrous, crowned with the very fine, white, simple, sessile *pappus*.

The Yarbury-hill plant I have determined to be our var. β., the smaller form with long capsule, or *E. macrocarpum* of Stephens.* On this station the plant is very dwarf, the soil being extremely dry, and the situation much exposed. The leaves are very glaucous beneath, and dark above, but more spreading and flatter than usual in this form, though on some of the specimens they are as much curled and corrugated as they ever are. The flowers are rather paler in colour, approaching in this respect though not in size the larger garden form, the *E. angustifolium* β. *brachycarpum* of Babington. The form and colour of the anthers are those of the normal wild type. It is evident that the two forms of *E. angustifolium* do not depend on soil or situation, since our long-fruited plant occurs in the driest and most exposed situations, as well as in swampy thickets.

* Mr. H. O. Stephens, in vol. viii. of the 'Annals and Magazine of Natural History,' p. 170, endeavours to establish a new species of *Epilobium*, allied to the present, which he calls *E. macrocarpum*, distinguishing the latter by its very long linear capsules, paler leaves and less deeply coloured flowers, from what he considers to be the true *E. angustifolium*, the capsules of which he describes as short and turgid, the flowers and leaves darker in colour. I think I have remarked a short-fruited var. of *E. angustifolium* in gardens, but the co-existence of the linear form in the seed-vessels, with a deep colour in the leaves and inflorescence, is proved in the description of the species given above, and is, I apprehend, purely accidental. The figures in Engl. Bot., Fl. Lon. and Fl. Dan. do indeed all

Since the above was written, I am convinced that two very distinct forms, if not species, exist, under the name of *E. angustifolium*, one of which, the *E. angust. β. brachycarpum* of Bab. Man., is only found in this island as a garden plant; the second, which is the *E. macrocarpum* of Stephens, is abundant and truly wild with us, and I fancy is the prevailing if not the only genuine wild state of the species throughout England, being that which I have uniformly met with in the Sussex forest and elsewhere. It is distinguished from that so common in cottage-gardens, and which I am inclined to believe is either an exotic species or a permanent variety produced by long cultivation, by its narrower or more contracted spike of flowers, which are much smaller, of a deeper purple, more inclining to violet, with bluish anthers; by its leaves, which are less spreading, smaller and narrower, of a yellower, duller and darker green above and very glaucous beneath, remarkably crisped, twisted and transversely plicate-rugose, with the lateral veins more exactly at right angles to the midrib; altogether a far less handsome plant. The capsules are long, linear and erect, the flower-buds suddenly contracted to a point.

The second or garden form, and which is certainly that of Curtis, Fl. Lond. i. fasc. 2, differs in its much larger and broader leaves, spikes and flowers, the former more spreading, brighter green, scarcely crisped and waved, flatter and less rugose, the lateral veins at a rather more oblique angle to the midrib; flowers much larger, paler and brighter, pink rather than purple; the anthers brick-red and rather oblong than elliptical; pods much shorter and broader.

The indifferent figure in Fl. Danica, ii. fasc. 5, t. 289, is probably intended for our common wild long-podded plant, as also that in E. B. xxviii. t. 1947, which is good for its size, but unfortunately does not give the seed-vessels.

Though met with in many parts of the S. of England,* this handsome plant is more common in the northern counties, as a cold and even frigid climate is most congenial to its nature. Wahlenberg tells us that in no part of Sweden does it display such stateliness and profusion as in Lapland, ranging even to the North Cape (lat. 71° 10'); and Linnæus, in his usual florid but seductive style, describes the humble hut of the sylvan Laplander, encircled in the flowering season with tall flowers of *Epilobium*, as emulating the palaces of the gods.† The Swedes call it *Himmelgräs* or herb of heaven. It is very widely dispersed over the northern parts of Europe, Asia and America.

The present species, though a true *Epilobium* in its fructification, approaches the American genus *Gaura* in habit and inflorescence.

** *Flowers regular. Stamens erect.*

† *Stigma 4-cleft.*

2. *E. hirsutum*, L. *Great Hairy Willow-herb. Codlings and Cream.* Stem much branched, lower leaves semiamplexicaul a little decurrent dentato-serrate, petals rounded notched much longer than the calyx, stigma 4-cleft, root creeping. *Sm. E. Fl.* ii. p. 213. *Br. Fl.* p. 135. *Lindl. Syn.* p. 108. *E. B.* xii. t. 838. *Curt. Fl. Lond.* fasc. 2, t. 21.

On ditchbanks, the margins of ponds, rivers and streams, in wet thickets, hedges

represent the capsules both short and somewhat turgid, but they depict the uppermost ones only, and such therefore as have not attained their full dimensions. In No. 51 of the *Annals and Mag. of Nat. Hist.* for December, 1851, are some further observations on these two presumed species by Mr. Leighton.

* In St. Leonard's forest, quite commonly; also about Arundel, and between Poole and Christchurch. I have seen it growing in large natural beds on the domain of Col. Wyndham at Singleton, six miles from Chichester, where it was pointed out to me by the Hon. Mrs. Vernon Harcourt.

† 'Flora Lapponica,' p. 113.

and pastures; extremely common. *Fl.* June? — September. *Fr.* September, October. 24.

Root creeping, horizontal, with several short, thick, fleshy tubercles. *Stem* bushy, erect, 4—6 feet high,* round, solid, much branched, covered like the rest of the plant with a copious, very soft, white, viscid down. *Leaves* lanceolate or ovato-lanceolate; lower ones opposite, a little decurrent; upper ones partly alternate, all sessile, denticulato-serrate, soft and downy. *Flowers* in leafy corymbose clusters, nearly an inch across, bright purplish pink netted with bluish veins. *Sepals* ovato-lanceolate, mucronato-acuminate. *Petals* regular, roundish heart-shaped, with a deep notch, greatly exceeding the calyx in length. *Stamens* erect, unequal, having a row of white connivent hairs between them and the germen; *anthers* pale yellow. *Style* erect, glabrous; *stigma* 4-cleft, rough, the segments revolute and obtuse. *Capsules* 2—3 inches in length, furrowed, clothed either with short erect pubescence, or shaggy with long, silky, spreading hairs. *Seeds* grayish brown, obovoid-oblong, semiterete, flattened on one side with 2 foveæ and an intermediate ridge, the apex with a minute apiculus; thickly covered with short bristle-like points; *pappus* closely sessile.

The whole herb has a peculiar subacid smell, residing, I believe, in the glandular pubescence of the stem and leaves, which has been compared to that of scalded codlings and cream, or of gooseberry fool.

3. *E. parviflorum*, Schreb. *Small-flowered Hairy Willow-herb*. "Leaves lanceolate sessile slightly toothed downy on both sides, stem nearly simple very downy or nearly glabrous, root fibrous, stigma 4-cleft."—*Br. Fl.* p. 135. *E. B. t.* 795.

By rivers, brooks and ditches, in moist places along hedges, lanes and roadsides, in damp woods and thickets; frequent, but less abundant than the last. *Fl.* June — September. *Fr.* September, October. 24.

E. Med.—By Quarr Abbey. Woods near the Priory, &c. Plentiful along the lane between the Brading road and Smallbrook farm. Abundant in Whitefield wood.

W. Med.—At Freshwater, with white and often both white and red flowers on the same stem.

Root of several rigid, pale, branched fibres, but not creeping or sending out suckers. *Stem* erect, firm, leafy, a little oblique at the very base, green and purplish on opposite sides, from about 1 to 3 feet in height, rounded, downy with copious, very soft, white and spreading pubescence, which on the higher part and on the branches becomes shorter, less soft and abundant, and glandulose, secreting globules of a viscid fluid; nearly simple or branching only towards its summit, the branches few, alternate, erecto-patent, scarcely again divided. *Leaves* in the larger plants often 3 or 4 inches long, dull somewhat hoary green, very soft and downy, more or less erect or spreading, lanceolate or rather oblong-lanceolate, subpetiolate, towards the base of the stem opposite, higher up and on the branches mostly alternate; acute, finely and rather closely denticulato-serrate, the serratures purplish and glandular; subcordate at base but not clasping. *Flowers* in elongating leafy clusters, terminating the stem and branches, about $\frac{1}{2}$ an inch in diameter, on very short but distinct pedicels; seldom widely expanded, erect. *Calyx* shorter than the corolla, a little downy; *sepals* elliptical or oblong-elliptical, with short, thick, glandular points. *Petals* obovato-elliptical, pale pink or purplish, sometimes white or nearly so, deeply emarginate, strongly veined. *Stamens* with white converging hairs between them; *anthers* roundish ovate; (in *E. hirsutum* they are elliptical-oblong). *Style* erect, glabrous, not exceeding the stamens; (in *E. hirsutum* it is a little longer than the stamens); *stigmas* at length spreading but not revolute. *Capsules* erect or patent, straight or curved, $3\frac{1}{2}$ inches or less in length and scarcely a line in width, with 4 prominent blunt angles, pubescent, greenish or reddish. *Seeds* brownish, obovoid-oblong, slightly incurved,

* I have seen them 7 or 8 feet in the Swan Pool, near Ryde.

flat and somewhat hollowed on their inner side, minutely papillose, scabrous, very many times shorter than the snow-white, simple, perfectly sessile *pappus*.

4. *E. montanum*, L. *Broad Smooth-leaved Willow-herb*. "Leaves shortly stalked ovate-oblong acute rounded at the base glabrous all toothed, stem rounded pubescent as well as the fruit, stigma 4-cleft, root fibrous, scions none."—*Br. Fl.* p. 315. *E. B. t.* 1177.

In similar places with the two preceding species, but often in drier situations, as on rocks, walls and reefs, hedgebanks, in gardens, and waste arid places; common. *Fl.* June—August. 4.

†† *Stigma undivided*.

5. *E. palustre*, L. *Narrow-leaved Marsh Willow-herb*. Leaves narrow-lanceolate sessile nearly entire and as well as the rounded erect stem subglabrous, stigma undivided, root with filiform scions, flower-buds drooping, seeds fusiform. *Br. Fl.* p. 136. *E. B. t.* 346.

In wet ditches and other swampy or boggy situations (never in dry places), far less frequent than the three last or the following species. *Fl.* July, August. *Fr.* October. 4.

E. Med.—In dykes or ditches about Blackpan, and about Apse farm, in plenty, *Dr. Bell-Salter !!!* Amongst rushes by the pond on Barritt's Common, in considerable abundance. [Boggy slope behind St. Helen's Green, A. G. More, Esq., Edrs.]

W. Med.—Low meadows near Mottiston mill, by Brixton.

Capsules very slender. *Seeds* greenish brown, narrow-oblong, tapering and somewhat pointed, flattish and grooved on one side, quite glabrous, many times shorter than the *pappus*, which is seated on the short contracted summit of the seed, hence appearing almost stipitate.

6. *E. tetragonum*, L. *Square-stalked Willow-herb*. "Leaves lanceolate sessile denticulate, stem with 2—4 angles, stigma undivided, root with scions, flower-buds erect, seeds oblong-obovate."—*Br. Fl.* p. 136. *E. B. t.* 1948. *E. virgatum*, *Fries*.

In precisely similar places with the four preceding species, also on dripping rocks, under moist walls, and in damp woods and hedges; common. *Fl.* July—September. *Fr.* September, October. 4.

E. Med.—In Whitefield Wood. In a field at Shanklin, by the road to the Chine. By the roadside from Ryde to Brading, about 100 yards beyond the 2nd milestone on the right hand hedge.

W. Med.—Abundantly along the upper Newport road, out of W. Cowes, at the foot of Northwood-Park wall.

Capsules very slender and erect, from about 2½ to 3½ inches long, and scarcely the sixteenth of an inch wide, glabrous to the naked eye, but beset with scattered appressed bristles, beaded from the seeds within. *Seeds* grayish or greenish brown, oblongo-obovate, semiterete, obtuse, or rather very slightly pointed, rounded (not contracted) at top, scabrous with close-set crystalline papillæ. *Pappus* closely sessile.

II. *OENOTHERA*, Linn. Evening Primrose.

"*Calyx-limb* deciduous, tubular at the base, deeply 4-cleft upwards; the segments reflexed, more or less combined. *Petals* 4.

Stamens 8. *Capsule* 4-valved, with many naked seeds." — *Br. Fl.*

An extensive genus of an annual or biennial plants, with handsome, yellow, white or purple, and very fugacious blossoms; natives of every part of America from the Straits of Magellan to Hudson's Bay, but most numerous towards the warmer parts of that vast continent.

* 1. *C. biennis*, L. *Common Evening Primrose*. "Leaves ovate-lanceolate toothed, stem somewhat hairy, flowers sessile subspicate, stamens about as long as the corolla, capsules nearly cylindrical 4-toothed." — *Br. Fl.* p. 136. *E. B. t.* 1534.

In waste ground by roadsides, and in moist or sandy places; but not indigenous, and scarcely even naturalized. *Fl.* July—October. ♂.

About Ryde, Cowes, Newport, &c., occasionally. On Apse heath, amongst potatoes, 1840.

III. *CIRCEÆA*, Linn. Enchanter's Nightshade.

"*Calyx-limb* deciduous, shortly tubular at the base, deeply 2-cleft upwards. *Corolla* of 2 petals. *Stamens* 2. *Ovary* 1—2 celled; *ovules* solitary in each cell, erect. *Stigma* 2-lobed. *Capsule* hispid with hooked hairs, scarcely dehiscent, 1—2 celled; cells 1-seeded." — *Br. Fl.*

1. *C. Lutetiana*, L. *Common Enchanter's Nightshade*. "Stem erect pubescent, leaves ovate-acuminate slightly repand toothed usually longer than the petiole, bracts none, ovary globose 2-celled at length broadly obovate." — *Br. Fl.* p. 137. *E. B. t.* 1056.

In moist shady woods, groves, copses, and under hedges in lanes; very common. *Fl.* June—August. ♀.

Order XXVI. HALORAGACEÆ, R. Br.

"*Calyx-tube* adnate with the ovary; *limb* of fertile flowers minute, 3-4 partite or wanting. *Petals* present or wanting. *Stamens* equal in number to the lobes of the calyx, or double as many, rarely fewer. *Ovary* with 1—4 cells; *ovules* solitary, pendulous. *Stigmas* as many as there are cells, papillose or pencilliform. *Fruit* dry, indehiscent, 1—4 celled, or composed of 4 indehiscent carpels slightly cohering by their inner angles and eventually separating. *Seeds* solitary, pendulous. *Albumen* fleshy, sometimes very thin. *Embryo* straight. *Radicle* superior.—*Mostly* herbs (*the British ones especially*), aquatics. *Leaves various as to insertion. The stamens and pistils often separated; the former are then inserted with the petals into the base of the calyx.*" — *Br. Fl.*

I. *HIPPURIS*, Linn. Mare's-tail.

"*Perianth* single, superior, forming a very indistinct rim to the germen. *Stamen* 1. *Style* 1. *Fruit* 1-celled, 1-seeded." — *Br. Fl.*

Aquatic plants, with whorled leaves and the aspect of some *Equisetum*, though not in the remotest degree related to that cryptogamic genus. The species are very few, and confined to the colder parts of the globe.

1. *H. vulgaris*, L. *Common Mare's-tail*. Leaves many (6—12) in a whorl, linear. *Sm. E. Fl.* i. p. 4. *Br. Fl.* p. 138. *E. B. t.* 763. *Curt. Fl. Lond.* ii. fasc. 4, t. 1.

In ponds, ditches and slow streams; very rare. *Fl.* May—July. *Fr.* July, August. 24.

E. Med.—Marsh-ditches between Brading and St. Helen's, plentifully, *Ed. Hart Vian, Esq.*, and *Mr. W. Turner !!!*

Herb quite smooth in every part. *Stem* simple or slightly branched, jointed, filled with a beautiful network of large angular cells, arranged in circles around a central medullary chord; procumbent and rooting at each division, with bundles of long white fibres; afterwards erect, and rising above the water as the flowering advances to a foot or higher. *Leaves* in whorls of 6—12, sessile, linear, fleshy, single-ribbed, quite entire (except a lateral curved tooth on a few here and there occasionally), glabrous, ending in a small hard point; the submerged leaves remaining all the winter are thin, pale green, membranous and deflexed, greatly like the subaqueous ones of *Callitriche*: those above the surface are bright green, thick and curving upwards. *Flowers* solitary at the insertion of each leaf. *Anther* large, 2-celled, reddish; *filament* inserted on the ovary in front of the style, at first very short but afterwards elongating considerably. *Ovary* turbinate, bearing on its upper and back part a very short conical style, and long, white, tapering stigma, much like that of some *Carex*.

The French call this herb *Pesse d'eau*, from its resemblance to a pine-tree in miniature.

II. MYRIOPHYLLUM, Linn. Water Milfoil.

“Monœcious. *Barren flowers*:—*Calyx* inferior, of 4 leaves. *Petals* 4. *Stamens* 4—8. *Fertile flowers*:—*Calyx* 4-lobed. *Petals* 4. *Stamens* 4—8, or wanting. *Stigmas* 4, sessile. *Fruit* of 4 sessile, subglobose, 1-seeded carpels, at length separating.”—*Br. Fl.*

1. *M. spicatum*, L. *Spiked Water Milfoil*. Leaves mostly in whorls of 4 together, the segments setaceous mostly opposite or subalternate. *Br. Fl.* p. 139. *E. B. t.* 83. *Fl. Dan.* iv. t. 681 bona).

In ditches, pools and clear slow streams: frequent. *Fl.* May—September. 24.

E. Med.—Very abundantly in ditches on Sandown marshes, as in those about the fort, and by the road before coming to the village from Brading. Ditches at the foot of Alverstun Lynch. Ditches on Brading marshes, abundantly. Ditch by Yarbridge.

W. Med.—Near Colwell.

Root a tuft of long, slender, brittle fibres, running deep into the soft mud. *Stems* branched, various in length, round, reddish, succulent, the interior beautifully filled up with radiating septa forming large oblong cells, rooting here and there occasionally at the joints, and often exceeding a crow-quill in thickness. *Leaves* in whorls of 4 together at each joint of the stem, finely pectinated, the segments setaceous, a few of the lower usually truly opposite, the rest imperfectly so or somewhat alternate, a little swollen at the base from a glandular prominence in the axil of each segment, scarcely if at all observable in the next species, in which the segments of the leaves are not only more decidedly alternate, but less numerous and farther apart. *Spikes* 3 to 5 inches long, erect or reclining on the sur-

face of the water, of several remote, leafless, 4- (or even 6-, *Gaudin*) flowered whorls round a bluntly quadrangular common stalk or axis. *Male (barren) flowers* sessile, occupying the 2, 3, or 4 superior whorls, conspicuous before expansion by their bright red colour, each subtended by 3 entire, roundish, concave bracts, of which that in the centre is by far the largest; *calyx* half-inferior, in 4 erect, unequal, roundish or oblong, green segments. *Petals* 4, alternate with the calyx-segments and several times longer, quickly falling, roundish, deeply hollowed or concave, each during æstivation enclosing 2 of the anthers, and forming together a cubic form, bright purplish red, with pale scarioso edges. *Stamens* 8, the length of the petals, inserted around the 4 rudiments of germens; *anthers* large, oblong-quadrangular, greenish yellow. *Fertile (female) flowers* in about as many whorls as the barren, and beneath the latter. *Carpels* brownish gray, subglobose, obtusely quadrangular, with 4 deep furrows, the intermediate faces rounded, forming as many lobes.

2. *M. alterniflorum*, DC. *Alternate-flowered Water Milfoil*. Leaves whorled mostly in threes sometimes opposite pectinately, segments capillary distant mostly alternate. *Br. Fl.* p. 189. *M. spic. β.*, *Sm. Engl.* iv. p. 143. *E. B. Suppl.* t. 2854. *Van Hall. Fl. Belg. Sept.* i. p. 856. No. 1068a. *Bönnig. Fl. Monast.* p. 291. No. 1146. *Petiv. Engl. Herb.* t. vi. fig. 6.

β. Leaves with linear segments; bracts under the sterile flowers linear-lanceolate, quite entire. *An. Moris.* iii. 622, sect. 15, t. 4, fig. 7, in *Sm. Engl. Fl.* iv. p. 143, cit. ? et *Raii, Syn.* ed. 3tia, curâ Dillen. p. 151.

In similar places and sometimes mixed with the last, and about equally if not more common than that. *Fl.* May—July. 24.

E. Med.—In vast abundance in some of the ditches on Sandown Level, where, as between the fort and the Brading road, it often fills them entirely. Also in ditches on the western skirts of Lake and Blackpan (?) common, in plenty. In Lashmere pond, at the foot of Bleak Down.

W. Med.—Along with *Typha angustifolia* in a pool between Great Thorness and Elmsworth farms. In two small elevated pools amongst the fields about half a mile E.S.E. of Rowledge, nearly in the angle formed by Buccombe and Galleberry Downs, in great plenty.

Herb floating or creeping on the wet mud about the margins of pools and ditches, much more slender than the last and of a brighter green. *Root* as in that a bundle of long, filiform, whitish, nearly simple fibres. *Stems* several, chordiform, jointed, striated, hollow, with several radiating septa and a central medullary core, oppositely and alternately branched. *Leaves* bright green, mostly whorled, ternate or quaternate, a few occasionally opposite (in this island usually in threes), their segments far finer, fewer and more distant than in *M. spicatum*, alternate rather than opposite in their arrangement, soon fading and collapsing from their greater tenuity, the lower ones decaying and falling away, leaving that part of the stem bare as in *M. spicatum*. *Spikes* terminal, very small, reclining on the surface of the water, their tips at first drooping, afterwards erect.

III. CALLITRICHE, Linn. Water Starwort.

“Monœcious. [*Barren flowers*:—*Perianth* single, of 2 leaves (they are, rather, 2 bracteas) or none. *Anther* of 1 cell. *Fertile flowers*:—*Germen* 4-lobed; lobes laterally compressed, indehiscent with four 1-seeded cells.”—*Br. Fl.*

1. *C. verna*, L. *Common or Vernal Water Starwort*. “Fruit nearly sessile, lobes parallel in pairs bluntly keeled on the back, styles constantly erect, bracts falcate.”—*Bab. Man.* p. 118. *E. B. t.* 722. *Br. Fl.* p. 370.

In ditches, pools, slow streams and rivers; abundantly. *Fl.* April—September. ☉.

The *bracts* are convoluted in opposite directions around the single *anther*, which is at the first nearly sessile and closely embraced by them, the *filament* elongating greatly afterwards.

2. *C. platycarpa*, Kütz. *Wide-fruited Water Starwort*. "Fruit nearly sessile, lobes parallel in pairs slightly winged at the back, styles erect in the flower reflexed closely over the fruit, bracts falcate."—*Bab. Man.* p. 118. *E. B. S. t.* 2864. *C. verna* β., *Br. Fl.* p. 370.

Frequent on the wet margins of pools, &c. "*Fl.* May—Sept. ☉. or 4."—*Bab.*

Its distinctive characters seem to me very questionable, and just such a difference of locality might be supposed capable of creating.

3. *C. pedunculata*, DC. *Pedunculated Water Starwort*. "Fruit stalked or nearly sessile, lobes parallel in pairs obtusely keeled at the back, styles divaricate in the flower reflexed over the fruit, bracts 0."—*Bab. Man.* p. 118. *E. B. S. t.* 2806. *Br. Fl.* p. 370.

In deep still waters; not very commonly. *Fl.* "June—Sept. ☉. or 4."—*Bab.*

A plant which I have supposed to be this, but which I have not yet minutely examined, grows in several places, chiefly in deep still waters of ditches and drains, but not very commonly.*

Order XXVII. CERATOPHYLLACEÆ, Gray.

"*Flowers* imperfect, monœcious. *Perianth* (involucre ?) simple, free, 10—12 cleft. *Barren fl.* :—*Anthers* 12—20 sessile, 2-celled, 2—3 cuspidate. *Fertile fl.* :—*Ovary* superior, solitary, bicuspidate above the base, 1-celled with 1 pendulous *ovule*. *Style* oblique, filiform, at length hardened persistent. *Stigma* simple. *Fruit* an *achene*, 1-seeded. *Albumen* 0. *Embryo* straight; with 2 cotyledons and a many-leaved *plumule*; *radicle* inferior.—*An aquatic order comprising one genus of doubtful affinity. Leaves whorled, rigid, dichotomous, with narrow serrated segments.*"—*Br. Fl.*

* [A detailed list of localities occurs in the author's MSS., but as it is prefaced with marks of doubt respecting the specific identity, we have thought it more prudent to throw it into a foot-note. It is as follows.—Edrs.]

C. autumnalis ? aut *pedunculata* ?—In a little pond at Rew Street. Ditch at the foot of Bleak Down, near the branching off of the road to Chale, Godshill, &c., but not flowering. Little pool in Northwood park, *Miss Kilderbee* ! By Lower Knighton mill. Abundantly in the mill-pool between Newport and Carisbrooke, and which Mr. Borrer, who was with me, thought might be *C. pedunculata*, but we could not find fruit or flower on it. In the mill-stream at Bridge Court, but not observed to fructify. On these stations the leaves were constantly linear and all submerged.

I. CERATOPHYLLUM, *Linn.* Hornwort.

"Character the same as of the order."—*Br. Fl.* p. 371.

1. C. — ?

In a ditch on Sandown level, nearly at the back of Lower Morton farm, not in flower and the species not determined, 1838.

Order XXVIII. LYTHRACEÆ, *Juss.*

"*Calyx* of 1 piece, free, persistent, the lobes varying in number, valvate or distant in æstivation, often with intermediate teeth. *Petals* inserted upon the calyx between its lobes, caducous, sometimes 0. *Stamens* inserted within the tube of the calyx, equal to, or double or triple the number of petals. *Ovary* 1, superior. *Style* 1; *stigma* usually capitate. *Capsule* membranous, 2—4 celled, opening longitudinally or irregularly. *Seeds* numerous, without *albumen*, on an axile placenta.—Herbs, with usually opposite leaves, without stipules. Flowers axillary or racemose or spiked."—*Br. Fl.*

I. LYTHRUM, *Linn.* Purple-Loosestrife.

"*Calyx* inferior, tubular, with 8—12 teeth, the alternate ones subulate. *Petals* 4—6. *Stamens* as many as, or twice as many as the petals. *Style* filiform. *Capsule* 2-celled."—*Br. Fl.*

1. *L. Salicaria*, *L.* Common or Spiked Purple-Loosestrife. "Leaves opposite lanceolate cordate at the base, flowers in whorled leafy spikes with 12 stamens, bractæas none."—*Br. Fl.* p. 140. *E. B. t.* 1061.

About the margins of ponds and rivers, on ditch-banks, in low wet meadows and thickets, osier-beds, &c., in various places. *Fl.* July—September. 24.

E. Med.—Wet thickets in Sandown level, towards Bordwood. The Wilderness, sparingly. A little S. of Buddbridge farm, very sparingly. Wet willow-thicket by Stone farm, in some abundance. Ditch-banks on the moors near Rookley farm, not unfrequent.

W. Med.—In a large withy-bed between Compton and Dursbury farms, a little N.E. of Compton Grange. Pan moor, by Newport. Plentiful in the marsh at Easton, and near Thorley in a meadow towards Wilmingham, most abundantly. Near Colwell.

Root tough, woody, much branched and creeping, blackish without, white within, and emitting many long slender fibres. *Stem* 1 or more, simple or copiously branched, solid, erect or ascending at the base, 2—5 feet high, with 4 or 6 acute slightly winged angles, according as the leaves are opposite or ternate, downy and often purplish, especially towards the top. *Leaves* sessile, opposite or in whorls of 3 or even 4 together, cordato-lanceolate, acute, quite entire, dark green, shining and nearly glabrous above, paler and more downy beneath, with several prominent nearly parallel nerves, their edges a little deflexed, very variable in size and in the degree of smoothness or pubescence. *Inflorescence* in densely crowded or sometimes rather remote whorls, constituting a long tapering spike of handsome, purple, almost sessile flowers, that terminates the stem and branches, producing blossoms in long succession. The number of flowers in each whorl is extremely variable, in general they are much more than 6, as mentioned

by Smith, very commonly 4 or 5 times that number, their colour too varying from a rich crimson to pale rose-red or even white, the whorls being also often dimidiate, and the flowers few or subsolitary in the axils of the lowest bracts or rather floral leaves. *Calyx* cylindrical, very hairy, 12-ribbed and 12-toothed (sometimes in the same spike 10-toothed and decandrous); 6 of the teeth long, subulate and exterior to the short, broadly ovato-triangular, intermediate ones, that are connivent in the bud, the longer always erect. *Petals* 6, inserted on the tube of the calyx, opposite to and nearly at the base of its longer segments (or accessory processes) where the texture is a little glandulose, oblongo-elliptical, entire, with purple veins, thin, weak and rumpled. *Stamens* 12 (sometimes but 10 in other flowers of the same whorl), inserted at the base of the calyx in a single row, alternately unequal in length, often bright red, the longer ones much exserted; *anthers* either green or yellow, their pollen similarly coloured, those on the long filaments more commonly green, as are frequently those of the shorter, at other times all the anthers are bright yellow. *Ovarium* conical, with a deep lateral furrow. *Style* cylindrical, often purple, bent to one side, sometimes included, at other times considerably exserted; *stigma* peltate, rough with glandular points, greenish yellow. *Capsules* brown, small, ovate or oblong, thin and membranous, quite included in the calyx, 2-valved, the valves often cloven. *Seeds* numerous, brownish white, pyriform, bluntly angular, somewhat shining and wrinkled.

II. PEPLIS, Linn. Water Purslane.

"*Calyx* campanulate, with 6 large and 6 alternating small teeth. *Petals* 6, often wanting. *Stamens* 6. *Style* very short. *Capsule* 2-celled."—*Br. Fl.*

Small, prostrate, smooth and somewhat succulent plants, closely resembling *Lythrum* in structure, but very different in appearance, inhabiting watery places.

1. *P. Portula*, L. *Water Purslane*.* "Flowers axillary solitary, leaves obovate."—*Br. Fl.* p. 140. *E. B.* t. 1211.

Common in wet boggy situations, watery ditches, and on the half-dried-up margins of pools and splashes. *Fl.* July, August. ☉.

E. Med.—By the pond at Ninham farm, near Ryde. At the Dripping well on St. George's Down. Abundant in ditches on the moors to the North of Gods-hill. Moist spots on Bleak Down, plentiful. Boggy ground at Lake common, near Sandown. On Stapler's heath, by Newport.

W. Med.—Ditches at Freshwater gate. Abundant in some ditches by the Medina, between Rookley and North-Ground farms, and in the black peat-bog about Cridmore, &c.

Root a bundle of pale slender fibres. *Stems* matted, a few inches in length, floating or prostrate and creeping on the half-dried soil, mostly reddish, brittle, alternately branched, very bluntly quadrangular, inwardly divided into 4 tubular cavities by a central medullary chord, connected with the circumference by as many partitions of cellular tissue, interrupted only at each pair of leaves by a node or joint, from which fresh fibres are mostly emitted and again take root. *Leaves* opposite, a few here and there somewhat alternate, scarcely above $\frac{1}{4}$ an inch in length, roundly obovate, attenuated into the flat petiole, bright green or reddish, very smooth and shining, entire or slightly emarginate, the higher ones mostly recurved. *Stipules* none. *Flowers* minute, solitary and axillary, nearly sessile at first, when in seed very shortly pedunculate, with a pair of subulate bracts from near the middle of each flowerstalk almost as long as the calyx. *Calyx* pinkish, subcampanulate, broad and shallow, oblongo-quadrangular, plaited, with 12 purplish ribs and as many alternately larger and smaller terminal teeth-like processes,

* This genus must be carefully distinguished from the true Purslane—*Portulaca*, which is not of British origin, a distinction which has not been attended to either by Smith or Hooker.

of which the 6 greater ones are triangular and erect or spreading, the remaining 6 short, blunt, or frequently produced into a sort of horn, which is mostly a little recurved. *Petals* 6, each inserted on a glandular depression a little below the margin of the calyx and opposite to the smaller calycine processes; very minute and often in part fallen away (sometimes, it is said, wholly wanting), obovato-rotundate, entire, pale pink, the midrib purplish. *Stamens* 6—8 (or 12?), inserted on the calyx near its base, and equal in length to the calyx-tube; *filaments* rose-red; *anthers* greenish or blackish, round, incumbent, of 2 large distinct lobes bursting along their outer edges. *Germen* rose-coloured, ovate, compressed, with a deep lateral furrow; *style* short, capitate-orbicular, glanduloso-pilose. *Capsule* scarcely so large as hemp-seed, at first reddish, then brownish and membranous, subglobose, a little compressed and somewhat 2-lobed by a lateral furrow, tipped with the style, about as long as the calyx, bursting irregularly. *Seeds* numerous, whitish or yellowish, trigonous, gibbous at the back and somewhat pointed at one end, finely and rugosely punctato-striate; very similar to those of *Lythrum Salicaria*.

[Order XXVIII.* TAMARISCACEÆ, *Desv.*]

Tamarix Gallica, L., is found at Freshwater gate, according to Pulteney, but is only growing there now in a cultivated state, and I suspect was never seen in any more wild condition. I notice it here to draw the attention of botanists to the genuine discovery of a species that has been assumed on very loose grounds as indigenous to this country. I have seen most of the recorded stations quoted in books, viz. St. Michael's Mount, Hurst Castle, Hastings, and at Landguard Fort, as well as on the banks about the Land's End and Lizard, and can safely assert that in none of these places has the *Tamarix* the semblance of an indigenous production. I am of opinion the wisest course would be to expunge *Tamarix*, with *Castanea*, *Staphylea* and one or two more genera, from the British Flora altogether.

Order XXIX. CUCURBITACEÆ, *Juss.*

"Frequently monœcious or diœcious. *Calyx* 5-toothed, the tube adnate with the ovary. *Corolla* 5-cleft, often scarcely distinguishable from the calyx, frequently reticulated. *Stamens* 5, often more or less cohering. *Ovary* 1-celled, inferior, with 3 parietal receptacles. *Style* short. *Stigmas* lobed. *Fruit* fleshy. *Seeds* flat, in a juicy aril. *Embryo* flat. *Albumen* 0. *Cotyledons* foliaceous, nerved. — *Succulent climbing plants, with extra-axillary tendrils (in the place of a stipule), frequently scabrous.*"—*Br. Fl.*

I. BRYONIA, *Linn.* Bryony.

"*Corolla* 5-cleft. *Filaments* 3-adelphous, inserted at the base of the corolla. *Anthers* 1-celled, 3-adelphous, applied to the edge or back of the connectivum, and forming a sinuous line. *Style* trifid; *stigmas* somewhat reniform or bifid. *Fruit* ovoid or globose, baccate, few-seeded."—*Br. Fl.*

1. *B. dioica*, Jacq. *Red-berried Bryony*. Vect. *Mandrake*. Leaves palmate 5-lobed callososcabrous on both sides, flowers diœcious, pistillate blossoms subumbellate, their common peduncle shorter than the leaves, their calyx about half the length of the corolla, fruit globose (red). *Jacq. Fl. Aust.* ii. tab. 199. *E. B.* vii. 439. *Fl. Dan.* xi. t. 1830. *Br. Fl.* p. 141.

In woods, thickets, hedges and fences, sometimes in open pastures, in the interior of the island, never along the coast. *Fl.* May—September. *Fr.* July—October. 24.

E. Med.—Very local. On St. George's Down, above West Standen farm. Near Pagham in several places. Arreton. Not uncommon on the (green?) sand about Perreton farm. Near Long-Down farm. Knighton and Ashe, [the late] *Lady Branton*. Shanklin, Undercliff, Cowes, *Sheridan's Guide*, but I have never seen it in any of these maritime localities, and suspect the Black Bryony (*Tamus communis*) has been the plant intended, which from the similarity of its English name is being constantly confounded with this very different genus.

W. Med.—Frequent in thickets, copses and bushy places in the tract of downs between Newport and Shorwell. Near Idlecombe, by the roadside. Plentiful about Roughborough farm. Marvel copse. Lane by Alvington. Hedges about White Croft. Frequent about Calbourne on the road to Shalfleet, and abundant between Calbourne and Brixton, also about Westover. Frequent in woods at Swainston. Rowledge. Garden-hedge at Redway. Woolverton, by Shorwell. New Barn and at Gatcombe. Northcourt. A few plants at the eastern end of Westover plantation. A pistillate plant or two in a wood near Afton House, the only instance where I have seen the species within some miles of Yarmouth. On the sand not far from Buck's Heath. At Chillerton, frequent. Foot of Mottiston Down, on the S. side.

Root very large, fusiform, either of one, or more commonly of two, often equal and divaricate, slightly branched, fleshy tubers, bearing a grotesque resemblance to the legs of a man, brownish or yellowish white externally, and uneven with close parallel wrinkles; within white, succulent and spongy, with the fætid odour of the herbage, in taste highly bitter, acrid and nauseous. *Stem* one or more, annual, alternately though not much branched excepting at its origin, scandent but not twining, supporting itself for many feet in length on hedges and bushes by long, simple, axillary tendrils, the direction of whose spiral is invariably reversed at some one or more points of the helix;* sometimes trailing, bluntly 5-angled, furrowed, scabrous with short bristly hairs, almost downy at its base. *Leaves* of a dull grayish, sometimes bright green, thinnish or membranaceous, greatly exceeding their short, stout, rounded, very rough petioles, various in size; heart-shaped in circumscription, palmately 5-lobed, 5—7 ribbed at base; lobes various in breadth and depth, of the smaller and upper leaves often very deeply cleft and narrow, of the larger and lower sometimes quite shallow, and bluntly angular-dentate only; in all more or less pointed or obtuse, of the uppermost leaves acute or acuminate, tipped with a soft mucro, middle lobe longest, and as well as the rest more or less obscurely subtrifid at the apex; very rough or scabrous on both sides and on their margins with numberless short, erect or curved, simple bristles with tubercular bases, longer and more copious on the under side of the leaf, jointed internally. *Staminate* flowers in corymboso-subumbellate clusters, of about 4 to 7 or 8 in each cluster, their common peduncle axillary, usually about as long as the leaves. *Calyx* greatly shorter than the corolla, its segments small, triangular-lanceolate, acute and reflexed. *Corolla* greenish white. *Filaments* 3, extremely short and thick, inserted on the short nectariferous tube of the corolla, two of them bearing each a pair of anthers, the third a solitary anther and closing the cavity below them; *anthers* 5, anfractuose, thick, their margins waved somewhat in the form of the letter N, and beautifully fringed on each side along the line of dehiscence with a row of bristle-tipped pellucid globules; *pollen* yellow, globular. *Pistillate* flowers much (about one-half) smaller than the staminate, in fewer (2-, 3-, or 5-) flowered, hence scarcely umbellate clusters, that are much shorter than the leaves, from the axils of which they spring. *Calyx* shortly pedunculate on the globose ovary, deciduous, its segments narrower and subulate, scarcely half the length of the corolla, spreading and recurved. *Corolla* with narrower, less copiously reticulated segments, very hispid within at their base.

* This interruption in the direction of the spiral I have remarked in the tendrils of *Sicyos angulata*; does it occur in those of other Cucurbitaceæ?

Style dilated upwards, 3- or 5-cleft and angled, with as many greenish, wedge- or fan-shaped, deeply channelled, papillosely hispid, wavy *stigmas*. *Ovary* globose, green and glabrous. *Fruit* (berry) globular, as large as moderately sized peas, dull scarlet when ripe, smooth and succulent, with an abominably nauseous and fœtid viscid juice, 3-celled. *Seeds* in form and colour somewhat like those of hemp but smaller, roundish ovoid, smooth, subcompressed, with a shallow border all around, mottled brown and gray, their number uncertain, commonly 6 or 7, sometimes but 2 or 3.

This is the sole British representative amongst the very few European plants of the order Cucurbitaceæ. Another species (*B. alba*) indigenous to the North and East of Europe, as our dioica to the South and West, differs in being almost constantly monœcious, in having black berries, the pistillate flowers racemose on a much elongated common peduncle, and their calyx scarcely shorter than the corolla.

The leaves of Bryony exhale a transient musky odour in warm damp weather, on dewy evenings or after a shower, as I have repeatedly experienced. The plant is called Mandrake in this island, probably in consequence of the roots having been formerly sold to the ignorant, by quacks, under that name, as endowed with virtues similar to the mandrakes mentioned in Scripture, of which nothing is known but by conjecture. Farriers are said to give the root to horses, for the purpose of inducing a sleek coat, and mixed with their food it is alleged to promote the fattening of pigs,—effects precisely those resulting from the administration of crude sulphuret of antimony to both those animals. On the human subject it acts as a drastic hydragogue purgative, the use of which is now discontinued in regular medical practice. Though the present species is an exception to the monœcious character of the genus, it is stated to assume occasionally with age the epicecine structure appropriate to the rest of its kind. The red-berried Bryony is found wild in most parts of England, becoming rare in the North, and particularly in the extreme western and maritime counties, as Devon and Cornwall. It is scarcely indigenous to Scotland, and quite unknown as a native of Ireland.

The Rev. Charles Hardy, of South Hayling, informed me that in 1848 a root of Bryony was dug up in Hayling Island which weighed 47 lbs., by a person who made use of a decoction of it with success against the scab in sheep.

Order XXX. PORTULACEÆ, *Juss.*

“*Sepals* 2. *Petals* inserted into the base of the calyx (somewhat hypogynous), mostly 5, usually distinct, sometimes wanting. *Stamens* of uncertain number, opposite the petals when of the same number. *Ovary* superior, 1-celled. *Style* 1 or 0. *Stigmas* several. *Capsule* opening transversely or by 3 valves. *Seeds* numerous on a central receptacle. *Albumen* farinaceous, surrounded by the curved *embryo*.—*Succulent herbs or shrubs*.”—*Br. Fl.*

I. MONTIA, *Linn.* Blinks.

“*Corolla* of 5 irregular petals, somewhat hypogynous, united at the base into one split up in front. *Stamens* 3, inserted upon the *corolla* and opposite to its smaller segments. *Stigmas* 3, almost sessile. *Capsule* 3-valved, 3-seeded.”—*Br. Fl.*

1. *M. fontana*, L. *Water Blinks. Water Chickweed.* *Br. Fl.* p. 142. *E. B. t.* 1206.

In wet springy places, along the margins of rills, drains and ditches, also on damp sandy ground, moist fallows, &c.; common. *Fl.* Spring to autumn. ☉.
E. Med.—Arable fields above E. Cowes. By Lashmere pond, in plenty. Marshy skirts of Lake common and other parts of Sandown level. Sandown, on wet ground near the cottage, *Miss Lucas*.
W. Med.—Near Yarmouth, *Rev. G. E. Smith*.

Order XXXI. PARONYCHIACEÆ, *St. Hil.*

“*Sepals* 5 (rarely 3 or 4), more or less cohering at the base. *Petals* minute, alternating with the lobes of the calyx, or 0. *Stamens* inserted into the base of the calyx (somewhat hypogynous), and opposite to its lobes when as many. *Ovary* superior. *Styles* 2—5. *Fruit* small, dry, 1-celled, 1—5 valved or indehiscent. *Seeds* numerous on a free central receptacle, or solitary and suspended from a long stalk arising from the base of the cell.—*Small branching* herbaceous or suffruticose plants, with *sessile entire leaves and membranaceous stipules*.”—*Br. Fl.*

I. SCLERANTHUS, *Linn.* Knawel.*

“*Perianth* 5-cleft. *Stamens* 10; 5, or more, frequently abortive or wanting. *Styles* 2.”—*Br. Fl.*

1. *S. annuus*, L. *Annual Knawel*. “*Calyx* of the fruit with erect or erect-patent rather acute segments edged with a narrow white membrane, stems spreading, root annual.”—*Br. Fl.* p. 353. *E. B. t.* 351.

In dry barren or sandy fields and pastures, waste and cultivated ground, fallows, &c.; very common. *Fl.* July—September. ☉.

Order XXXII. CRASSULACEÆ, *DeCand.*

“*Sepals* 3—20, more or less cohering at the base. *Petals* as many as the sepals, sometimes cohering, inserted (as well as the stamens) at the base of the calyx (subhypogynous). *Stamens* as many as the petals, or twice that number. *Ovaries* verticillated, as many as the petals, each usually with a small flat scale or gland at its base, 1-celled, tapering into a stigma. *Follicles* with several seeds fixed in a double row to the ventral suture. *Albumen* fleshy, thin.—Herbs or shrubs, with *fleshy leaves and no stipules*.”—*Br. Fl.*

* Knawel, from the German name of the plant, *Knawel*. *Knäuel* or *Knawel* signifies a knot or aggregate in roundish masses of any small bodies; in the present genus the flowers are in small knots or bundles (*geknäulte Blumen*): hence its other German appellation of *Ackerknöterich*, from *Knoten*, a knot.

I. SEDUM, Linn. Orpine. Stonecrop.

"*Calyx* in 4—6 deep segments, often resembling the leaves. *Petals* 4—6, distinct, patent. *Stamens* 8—12. *Follicles* many-seeded, each with an entire or emarginate scale at its base."—*Br. Fl.*

* *Root thick. Leaves flat.*

1. *S. Telephium*, L. *Orpine Livelong*. Leaves ovate-oblong coarsely serrate plane, corymbs leafy, stem erect. *Sm. E. Fl.* ii. p. 313. *Br. Fl.* p. 147. *Lindl. Syn.* p. 64. *E. B.* xix. t. 1319. *Curt. Fl. Lond.* i. fasc. 3, t. 25.

In woods, thickets, borders of fields, along hedges, and rough, stony, bushy places; rare. *Fl.* July—September. 24.

E. Med.—Near Ashey, very sparingly.

W. Med.—Plentifully in a moist field and the surrounding hedges close by Pound Green, between it and Sheepwash farm, Freshwater.

Herb quite smooth and extremely succulent, drying with the greatest difficulty. *Root* of numerous, clustered, soft, white, fleshy, ovate and pointed tubers, ending in long fibres. *Stems* 1—2 feet high, erect, ascending or procumbent below, round, solid, shining, green and purple on opposite sides, simple and leafy. *Leaves* scattered, plane or a little concave, sessile, spreading below, often nearly erect above, 1 or 2 inches in length, oblongo-ovate, sharply but unequally dentato-serrate, bright green or often purplish on the upper side, glaucous beneath with a strongly keeled rib, very smooth, thick and shining; entire and somewhat wedge-shaped towards the base. *Flowers* crowded, dark rose-red, not expanding until long after the buds appear fully formed, which is perhaps one reason for its popular name of Livelong; in dense, compound, hemispherical, terminal and axillary tufts, the latter on long naked stalks, altogether forming an oblong leafy corymb bracteated under some of the principal subdivisions. *Sepals* lanceolate-acute, not coloured. *Petals* ovato-lanceolate, slightly keeled, much longer than the calyx, acute. *Stamens* with red anthers, 5 of the filaments adnate in their lower part with the petals, those opposite the sepals free. *Germen* oblong. *Styles* short, nearly erect. At the base of each germen and that of the petals, but between the two, are as many flat, yellow, striated glands, of a long square shape, nectariferous at their summits. The plant varies in its leaves and blossoms, the latter being sometimes white (*Fl. Dan.*), and the former opposite and nearly entire. The herbage is quite devoid of acrimony.

** *Root small. Leaves terete, semicylindrical or gibbous.*

† *Flowers white or reddish.*

†2. *S. album*, L. *White Stonecrop*. "Leaves scattered oblong-cylindrical obtuse spreading, cyme much branched glabrous, petals lanceolate."—*Br. Fl.* p. 148. *E. B.* t. 1578.

In rocky stony places, on walls and roofs of houses; a very rare and doubtfully native species in this island. *Fl.* July, August. 24.

W. Med.—On the thatch and tiling of two cottages at Yarmouth, plentiful in 1838, but the thatch has been since removed and the plant partially destroyed. [Abundantly on the tiled roof of a cottage at Carisbrooke, on the road to and very near Newport, 1854, *Dr. Bell-Salter*.—Edrs.]

Herb 6 or 8 inches high, growing in dense tufts. *Stems* branching at the

base, round, reddish, brittle, smooth and succulent. *Leaves* scattered on the flowering stems, on the barren shoots somewhat crowded, chiefly on the upper part in both, linear-oblong, very obtuse, compressed, spreading and spurless, smooth and succulent. *Flowers* in dense cymose panicles, of 3 principal branches numerously subdivided at their summits. *Calyx*-segments ovate, very blunt, dashed with reddish brown. *Petals* white, three times the length of the calyx, lanceolate, rather obtuse, each with a streak of light purple at the back towards the base, often suffused with a faint tinge of the same colour all over. *Stamens* 10; *filaments* white: *anthers* red. *Germens* with tapering styles, *hypogynous glands* yellow.

3. *S. anglicum*, Huds. *White English Stonecrop*. "Leaves mostly alternate ovate gibbous fleshy produced at the base, cymes glabrous few-flowered, petals very sharp at the point"—*Br. Fl.* p. 148. *E. B. t.* 171.

On dry sandy ground, barren pastures, rocks, banks and cliffs near the sea; in several places abundantly. *Fl.* June, July. 24.

E. Med.—On the Dover, Ryde. Abundant on St. Helen's spit. Sandown bay.

W. Med.—Between St. Catherine's Point and Blackgang chine. *S. side* of Brixton down, *Dr. Pulteney* in 'Hampshire Repository,' i. p. 120.

Root small, annual, fibrous, sending forth many weak filiform stems, which are procumbent at the base, round, smooth and usually reddish, 2 or 3 inches high, bare of leaves below. *Leaves* alternate or partly opposite, sessile, ovate, fleshy, very convex on the back and plane above, with a very small point or angle at the base below the point of insertion with the stalk, scarcely to be called a spur. *Cyme* terminal, very simple, of two branches, each bearing from 2—4 flowers, with another nearly in the fork of the branches. *Flowers* reddish white, star-like, very ornamental to our dry sandy shores. *Sepals* ovate, bluntish, quite smooth, not half the length of the petals. *Petals* lanceolate, acute and keeled beneath. *Filaments* white; *anthers* brownish purple. *Germens* tapering, their points erect, spreading, or a little recurved, tinged with rose-colour, with a brown somewhat heart-shaped scale at the base of each.

†? 4. *S. dasyphyllum*, L. *Thick-leaved White Stonecrop*. Leaves ovato-globose mostly opposite, stems reclining below, panicle few-flowered viscid. *Sm. E. Fl.* ii. p. 316. *Br. Fl.* p. 148. *Lindl. Syn.* p. 64. *E. B. t.* 656. *Curt. Fl. Lond. fasc.* 8, t. 25.

On rocks, walls and roofs; rare, and possibly only naturalized. *Fl.* June, July. 24.

E. Med.—On the roof of the South porch of Brading church, and walls adjoining; plentifully in 1838, but since diminished by repairs. On the tiled coping of a wall at the S. end of Brading, by the house of a baker of the name of Riddick, *Miss Lucas*, who first pointed out this species to me as an Isle-of-Wight plant. On the wall before the dwelling-house at Alverstton mill, and on the roofs and sheds of the outhouses adjoining, in very great abundance in 1841.

An elegant species, known at once by its very thick, egg-shaped, almost globular leaves, which are extremely juicy, and attached to the stem by a point barely visible to the naked eye, hence falling away upon a slight touch, which, with the extreme brittleness of every part of the plant, makes it difficult to collect large and perfect specimens.

Flowers white. *Petals* elegantly streaked on the back with rose-colour, extending along the keeled centre, where there is a row of red and stalked glands like those clothing the calyx and pedicels. *Scale* at the base of each germin heart-shaped, yellow.

I find many flowers with 6 stamens and 12 petals in my wild specimens.

†† *Flowers yellow.*

5. *S. acre*, L. *Biting Stonecrop*. *Wall-pepper*. "Leaves erect alternate ovate gibbous fleshy produced at the base, cymes trifid glabrous leafy, sepals obtuse gibbous at the base, petals acute."—*Br. Fl.* p. 148. *E. B.* t. 839.

On dry sandy ground, hedgebanks, walls, rocks, and roofs of buildings; very common. *Fl.* June, July. 2f.

E. Med.—Salterns Dover (betwixt Springvale and Salterns), in plenty, *Dr. Bell-Salter*.

W. Med.—Abundant on dry sandy banks at the S. end of Shorwell.

6. *S. reflexum*, L. *Crooked-leaved Yellow Stonecrop*. "Leaves terete awl-shaped scattered spurred at the base, flowers cymose, segments of the calyx lanceolate slightly acute."—*E. B.* t. 695. *S. glaucum*, *Donn.*: *E. B.* t. 2477. *Br. Fl.* p. 149.

On walls, ruins and (especially thatched) roofs of houses; frequent; rarely on dry sandy banks, rocks and cliffs. *Fl.* July, August. 2f.

E. Med.—Until lately it grew rather plentifully on part of the ruins of Quarr Abbey, but is now nearly if not quite lost by the pulling down of the portion of wall on which it flourished, for building material. Roof of a wooden house by the roadside between Nettlestone and St. Helen's, a little before coming to the church. Depending from the rocky bank on the left hand descending Morton Shoot, by Brading. Roof of a cottage between Niton and Whitwell, and also at Shanklin by the turnpike-gate. On a low wall at Lower Stenbury, but said to have been purposely planted there. Wall below the church at Newchurch, *Dr. Bell-Salter*. At Godshill, *Miss G. Kilderbee*! Sandown fort, *Mr. Snooke*.

W. Med.—Walls of Carisbrooke castle. At Calbourne. Old walls at Wolverton, by Shorwell. Roof of a cottage at Easton, *Mr. Snooke*.

II. *SEMPERVIVUM*, Linn. House-leek.

"*Calyx* 6—20 cleft. *Petals* distinct or slightly united at the base. *Stamens* twice as many as the petals, or as many and opposite to them. *Follicles* many-seeded; hypogynous scales lacinated, toothed or none."—*Br. Fl.*

*1. *S. tectorum*, L. *House-leek*. *Sen-green*. "Leaves ciliated, offsets spreading, petals about 12 entire and hairy at the margins."—*Br. Fl.* p. 147. *E. B.* t. 1320.

On walls and rocks, frequent, but always introduced. *Fl.* July. 2f.

III. *COTYLEDON*, Linn. Navelwort.

"*Calyx* 5-partite. *Petals* united into a tubular or campanulate corolla. *Stamens* 10, inserted upon the tube of the corolla. *Follicles* many-seeded, each with a scale at its base."—*Br. Fl.*

1. *C. Umbilicus*, L. *Wall Pennywort*. *Navelwort*. "Leaves peltate crenate depressed in the centre, stem with a (usually) simple raceme of pendulous flowers, upper bractæas minute entire, corolla scarcely cleft to the middle, lobes ovate acute erect, root tuberous."—*Br. Fl.* p. 146. *E. B.* t. 325.

On moist shaded walls, rocks, fences and stony hedgebanks; very rare. *Fl.* June—August. 24.

E. Med.—Found in 1839 by my friend G. Kirkpatrick, Esq., covering about a foot square of a low stone fence at Bohemia, growing in light friable soil, and scarcely 3 inches high!!! In April, 1843, the same gentleman and myself observed it in great abundance about the same spot, and particularly on hedgebanks along the cross-road from Bohemia to Bleak Down and the Star Inn, scattered over the fences for a considerable distance from the former place. Near Lake, *Miss Lucas*. [On both sides of the road near Kennerly, in great abundance, *Dr. Bell-Salter*, Edrs.]

W. Med.—[Near Kingstone, on the heathy ground both sides of the road towards Bleak Down, *Dr. Bell-Salter*, Edrs.]

A very smooth, glabrous, pale and succulent plant. *Root* a roundish, white and fleshy tuber, hirsute with innumerable brownish, woolly and slender fibres. *Stem* from 2 or 3 inches to 1 or 2 feet or even more in height,* erect or ascending, solitary or several, simple or branched alternately, round, solid, a little leafy, often dashed or streaked with purple or wholly of that colour below. *Leaves* alternate, bright green or sometimes reddish, fleshy and somewhat shiving, a little glaucous underneath, obscurely veined, on round very brittle stalks, of considerable though variable length; the radical ones numerous, crowded, orbicular and peltate, deeply cupped or concave, with an umbilical depression in the centre corresponding to the axis of the petiole, unequally and mostly obtusely crenate, notched and sublobate. *Flowers* very numerous, in long, erect, terminal and axillary, simple and leafless, spicate racemes, secund, lax or drooping. *Pedicels* terete, shorter than the flowers, each subtended by a linear-lanceolate fleshy bract longer than the pedicel, and of which those at the lower part of the raceme gradually become broader, more or less toothed and finally leafy. *Calyx* about $\frac{1}{2}$ the length of the corolla; *sepals* lanceolate, acute, close-pressed against the latter. *Corolla* pale greenish or sometimes reddish, tubuloso-campanulate, subcylindrical, obscurely 5-angled, scarcely $\frac{1}{2}$ an inch in length; the mouth greener, in 5 short, broadly ovate or roundish, overlapping, suddenly acuminate segments, their tips a little spreading. *Stamens* really inserted at the base of the corolla, their filaments adnate and incorporated with its cellular tissue for the greater part of their length, the free portion of each emerging a short distance below the segments, the 5 opposite to the latter rather longer than the rest;† *anthers* yellowish, nearly orbicular. *Hypogynous scales* 5, erect, brownish yellow, oblong, a little contracted and emarginately 2-lobed at the summit, thin, flat and nectariferous. *Germens* linear, erect, obliquely tapering into their short obtuse styles, that are slightly flattened and glandulose just below their somewhat recurved summits. *Seeds* very minute and numerous, elliptical-oblong, pale brown, appearing as if covered with a thin wrinkled pellicle.

The expressed juice of the Wall Pennywort, administered in the quantity of two tablespoonfuls twice or thrice a day, or in the form of an extract, has been brought into notice as a remedy for epilepsy by my friend Thos. Salter, Esq., of Poole, in the 'London Medical Gazette' for March 2nd, 1849. None of the old authors whom I have consulted ascribe any efficacy in this complaint to the Cotyledon, the use of which was first communicated to the public in an old number of a magazine, and said to be the contribution of the celebrated John Wesley.

* In the comparatively dry climate of the Isle of Wight the plant is of much humbler growth in general than in the more humid western counties of England, and in Scotland or Ireland; some of my specimens however, collected in the present very moist season of 1843, equal in luxuriance any I have seen elsewhere.

† The adnate part of their filaments, more prominent than that of the other five, showing I suppose that they belong to an interior series or verticil.

Order XXXIII. GROSSULACEÆ, *DeCand.*

"*Calyx* 4—5 cleft, the tube entirely or in part adnate with the ovary. *Petals* 4—5, small, placed at the mouth of the tube alternately with the 4—5 short *stamens*. *Ovary* 1-celled, with 2 opposite parietal placentas which are sometimes projected into the interior and resemble dissepiments. *Ovules* many. *Style* 2—4 cleft. *Berry* crowned with the remains of the calyx. *Seeds* suspended by long stalks among the pulp. *Albumen* horny.—Shrubs, often *spiny*, of temperate climates, with alternate lobed leaves."—*Br. Fl.*

I. *RIBES*, *Linn.* Currant. Gooseberry.

"*Petals* small, scale-like. *Stamens* included or nearly so. (*Style* erect, and *ovary* with nerve-like *placentas* in all the British species)."—*Br. Fl.*

* *Without spines. Flowers racemose.*

1. *R. rubrum*, *L.* Common Red Currant. Flowers perfect, leaves bluntly 5-lobed, bractees very small, calyx nearly plane and ovary glabrous, petals obtuse.

α. Racemes glabrous, pendulous. *E. B.* t. 1289. *Br. Fl.* p. 150.

β. sylvestre, *Mert. et Koch in Röhl. Deutschl. Fl.* ii. p. 249. *Wimm. et Grab. Fl. Siles.* i. p. 209. *Fl. Dan.* vi. t. 967 (from a dried specimen probably).

γ. "Racemes slightly downy, erect in flower, pendulous in fruit." *R. rubrum β.*, *Br. Fl.* p. 150. *R. petræum*, *Sm.*

In moist woods, thickets, hedges, and by stream-sides; very frequent. *Fl.* April, May. *Fr.* July. *h.**

E. Med.—Not rare about Ryde, in Marina wood by Apley, and in a thicket by the new road from the Dover to St. John's. About Quarr Abbey, between it and Fishbourne. Lane near Sandown. Bordwood lynch, Parsonage lynch, and other wet thickets about Newchurch, with *R. nigrum*. Plentiful in Knighton West copse. Abundant in Horringford withy-bed. Abundant in a boggy thicket and withy-bed on the western skirt of Blackpan common. Cleveland copse, Appuldurcombe.

W. Med.—Very frequent about Newport, on the road to Gatcombe. Little Standen wood. In profusion in the deep hollow way by the road from Newport to Shorwell, in front of Idlecombe farm; also in a lane (Plash lane?) a little S.W. of Carishbrooke castle. In a retired lane leading up to Buccombe down (called, I believe, Cow lane) from nearly opposite Buccombe farm, and in almost every thicket, copse and hedge about Buccombe, Shorwell and Calbourne. Swainston woods. Frequent in woods near Yarmouth, and especially abundant in a copse on the East bank of the Yar, called Beckett's copse, a little below Freshwater mill. Symington copse, near W. Cowes, with *R. nigrum* and *R. Grossularia*. Tolt copse, near Gatcombe. Very abundant in Lorden copse. Common about Chillerton. Common in New Barn Hummet, Calbourne, and abundant in a

* [The localities, diagnostic characters and subsequent remarks refer to the form *β.*—the wild state of the plant.—*Edrs.*]

small copse or patch of wood between Stonewell or Stoneover and Churchills farms, about due S. from Ningwood green. Plentifully in the first wood along the shore at Yarmouth, immediately under Bouldner. Becomes rarer in the very open and level south-western quarter of the island.

γ. In the High wood at Swainston, abundantly, 1846.

Root mostly much branched, sometimes nearly simple, blackish brown, and often creeping considerably and throwing up fresh stems at some distance from the original plant. *Stem* about 2 or 3 feet high, the centre filled with a spongy pith, seldom much branched in the wild state, often quite simple, sometimes however appearing as an irregular straggling bush, ramified usually from the base, and dividing into a few distant, unequal, straight and upright branches, the older covered with a dark, reddish brown, very smooth cuticle, that on the younger wood cinereous. *Leaves* much like those of the vine in shape and texture, but smaller, roundish, 3- or 5-lobed and angled, the basal lobes mostly obscure, the middle lobe shorter and less acute than in *R. nigrum*; cordate at base, light green above, paler and when young mostly very downy beneath, plicato-rugose, acutely and unequally incised, serrate, the serratures tipped with a gland, destitute of scent from the want of resinous glands, as in the black Currant. *Petioles* semiterete, channelled above, pubescent, membranously winged and often fringed with a few remote hairs and stalked glands below. *Racemes* lax or nodding (sometimes erect in flower, the *R. petraeum* of Smith), finally drooping or pendulous, solitary from the bosom of the leafy fascicles, about $1\frac{1}{2}$ or 2 inches long, many-flowered, glabrous or a little downy, with here and there an extremely minute reddish and stalked gland. *Flowers* about 3 lines in diameter, whitish green, but in the wild variety we are now describing always more or less dotted, streaked or suffused with a purplish brown colour observable on every part, but most constantly on the disk, from which it is seldom absent. *Pedicels* patent, 2 or 3 times as long as the broadly ovate, concave, loosely clasping bract at its base, besides which there is an occasional pair of bracts nearer the flower. *Calyx* basin-shaped, glabrous, with a wide limb, cleft into 5 segments of an obcordate or somewhat fan-shaped form, much broader than long, finally revolute at the apex. *Petals* very minute, springing from the margin of the fleshy disk between the calyx-segments, cuneato-obcordate, erect or spreading, entire or slightly emarginate. *Stamens* opposite to the calycine segments, in form like the top of a crutch, extremely short (about equalling the petals), erect, glabrous: *filaments* terete, slightly tapered; *anthers* whitish, incumbent, broader than the length of the filaments, formed somewhat like the head or handle of a crutch, their lobes roundish, merging into the compressed subapiculate connectivum, and bursting along a central line of dehiscence. *Style* very short, seated in a depression of the fleshy disk, which fills the tube of the calyx, and surrounded by a tumid glandular fillet, deeply cleft into 2 cylindrical spreading or somewhat recurved segments, with simple, subglobose, glandular tips or *stigmas*. *Fruit* smaller than in the garden plant, of a rather paler red, extremely acid, generally very sparingly produced or quickly devoured by birds.

The red Currant is indigenous to most of the colder parts of Europe, and is found both in Asia and America beyond the arctic circle. It has been usually regarded as a native of the northern counties only in England, and merely naturalized in the South; but in the Isle of Wight, in Sussex and Dorsetshire (*Dr. Bell-Salter*), its abundance in the most sequestered situations plainly marks it as an aboriginal with us. In the wild state the stem is generally simple or with very few branches, and, although flowering freely, produces fruit but sparingly. The Currant thrives best in a climate neither too warm nor too cold; it resists both heat and drought much better than the Gooseberry, producing fine fruit where the latter fails from these causes. I have eaten very good currants at Montpellier, where the summers are intensely hot and dry, and the gooseberry is never seen.

It is to be remarked that the flowers of the wild red Currant are, in this island at least, always more or less tinged with reddish brown, whilst those of the cultivated variety are mostly if not constantly destitute of colour.

2. *R. nigrum*, L. *Black Currant*. Without thorns, racemes few-flowered lax drooping downy with a separate flower-stalk at their base, flowers globoso-campanulate, bracts much shorter than the pedicels, leaves acutely lobed resinoso-punctate beneath. *Sm. E. Fl.* i. p. 333. *Br. Fl.* p. 150. *E. B. t.* 1291.

In low swampy or boggy woods and thickets, and along the margins of streams; rare, but like the last undoubtedly indigenous. *Fl.* April, May. $\frac{1}{2}$.

E. Med.—In Hurringford withy-bed, sparingly but certainly wild. In a wet willow-thicket half way between Newchurch and Winford, sparingly. Sparingly in the plantation just out of Appuldurcombe park, at the Godhill or North-entrance lodge, possibly an escape from the lodge-garden. Very sparingly in the wood at the foot of the cliff near Cook's Castle, but apparently wild.

W. Med.—In the wet willow-ground by the stream close to Sheat farm, in considerable plenty, but perhaps naturalized at some former time from the garden there. In several parts of Bordwood lynch, sparingly, but indisputably wild. In Symington copse, between Medham and Somerford, W. Cowes, with *R. rubrum* and *R. Grossularia*. A few small bushes in a wood a little to the East of Rewstreet farm. In a wet thicket by the pond just out of Kingston on the way to Shorwell, rather plentifully.

A shrub of stouter habit than the last, preferring wetter situations. *Stem* unarmed, erect, from about 2 to 4 feet high, and like the last species not much branched in the wild state, bark on the younger branches reddish ash-gray and smooth, on the trunk and older branches rough, brownish or blackish. *Leaves* alternate, or on the short flowering shoots subfasciculate, their under side sprinkled with yellow, resinous, imbedded globules, in which the peculiar strong odour of the plant resides, and which has been compared to that of Savine (?), larger and of a paler green than in the last species, and more deeply and acutely lobed, slightly hairy along the hedges and veins of the under surface, subquincelobate, the posterior lobes small and often nearly or quite obsolete, the 3 anterior lobes triangular-acute, all unequally inciso-serrate, the serratures bluntish and tipped with a gland. *Petioles* mostly about as long as the leaves, pubescent, channelled and slightly decurrent at their dilated bases, near which they are usually fringed with a few distant downy ciliæ. *Racemes* simple, few-flowered, lax or drooping, downy, 2 or 3 inches long, aggregate in the midst of the leaves, with for the most part a solitary distinct flower-stalk at the base of each cluster. *Pedicels* drooping, very unequal, as long as or much longer than the flowers, seldom shorter, the inferior remote. *Bracts* solitary at the base of each pedicel, and far shorter than the latter, minute, loosely clasping, more or less pointed or acuminate. *Flowers* more like those of the following species in appearance, strongly scented. *Calyx* downy, sprinkled with resinous globules, subgloboso-campanulate, obsoletely 5-lobed, the summit in 5 obtuse finally reflexed or revolute segments, tinged with reddish brown. *Petals* roundish ovate, entire, greenish or reddish, a little connivent. *Stamens* erect, the length of the petals; *filaments* broad, flattish; *anthers* pale buff, roundish elliptical, their lobes united. *Style* the length of the stamens, entire or slightly cleft at the summit, seated on a glandular base; *stigma* a roundish, 2-lobed, viscid gland.

** *Armed with spines. Peduncles 1—3 flowered.*

3. *R. Grossularia*, L. *Common Gooseberry*.* Leaves rounded and lobed, peduncles short hairy 1—3 flowered with a pair of

* The name which this well-known and wholesome fruit bears with us is probably corrupted from its denomination in various languages of Teutonic origin or admixture; *Kruisbezie*, Dutch; *Krusbær*, Swedish; *Kräuselbeere*, German; all alluding to the crisped or plaited look of the leaves, and hence the Latin *Uva crispa*.

minute bracteas. *Br. Fl.* p. 151. *E. B. t.* 1292. *R. Uva-crispa*, *L.*: *E. B. t.* 2057.

Frequent and truly wild in woods and thickets, with the first species, but always more sparingly; less certainly indigenous in hedgerows in the open country. *Fl.* April, May. $\frac{1}{2}$.

E. Med.—In a hedge exactly opposite the second milestone from Ryde on the road to Brading, and in a few other spots thereabouts, but perhaps brought with quicks when making the hedge. Certainly wild in Hungerberry wood near Shanklin, and in Knighton West wood near Newchurch. Northland copse by Yaverland, and amongst the thickest brushwood at East End. Between Shanklin and Cook's Castle, under the cliff, where, as in many of the above stations, it grows very remote from human habitations, but in all of them sparingly scattered. In several woody places in the Undercliff, certainly wild. In wet thickets about Wackland. In the shore at the Priory. Cleveland copse, Appuldurcombe. Very common in various places about Knighton mill, Hartsash, &c. Frequent in hedges between Shanklin and Newchurch, Merston, &c.

W. Med.—Tolt copse, Gatcombe. About Buccombe, Idlecombe, Shorwell, &c., with *R. rubrum*.

A bushy shrub with blackish bark, and many straight, irregularly spreading, cinereous branches, armed under each leaf-bud with sharp spines, usually in threes. *Leaves* in fascicles of about 4 together, roundish, 5-lobed, the lobes cut into several blunt shallow segments, the 2 upper ones obscurely marked, bright green, soft and pliant, smoothish or more or less hairy, a little shining beneath, their *petioles* downy with a few long gland-tipped hairs. *Flowers* solitary or in pairs from the centre of each bundle of leaves, drooping, finally downy like the peduncles. *Calyx* bell-shaped, its segments reflexed, ovate, rounded, tinged with brownish red. *Petals* minute, whitish, erect, cuneato-cordate, entire. *Stamens* erect, much longer than in the Currant; their *filaments* whitish; *anthers* buff-coloured. *Styles* about as long as the stamens, often deeply cloven almost to their bases, very hairy below. *Bracts* extremely variable in size and situation, solitary, in pairs, 3 together, or none. I find one or two coloured scales sometimes, on the lower part of the calyx-tube, in my specimens, in which the peduncles are mostly 2-flowered, with a usually solitary sheathing bract just below the point of divarication. *Fruit* rarely seen with us on the wild bush; in one instance in which I found berries produced they were of a light amber-colour, slightly downy but not hairy, and scarcely exceeding the largest white currants in size.

Restricted to much more temperate latitudes than the red or black Currant, yet it requires less warmth to bring the fruit to perfection. It is generally thought to be naturalized in this country, and not an aboriginal native; an opinion that has perhaps arisen from the silence of the older botanists or herbalists respecting it; neither Gerard, Parkinson nor Ray mention it as found wild in their time, yet it can hardly be imagined that a shrub universally cultivated then, as at present, should only of late years have evinced a tendency to escape from the garden to the woods. The finest gooseberries are grown in the North of England and Scotland, where the summers are cool and moist: with us here this fruit has sensibly degenerated; the bushes look stunted, unhealthy, and overgrown with moss, whilst the currant attains in these parts a superior size and flavour.

Order XXXIV. SAXIFRAGACEÆ, *Juss.*

“*Calyx* of 4—5 sepals, or united into a tube which is wholly or in part adnate with the ovary. *Petals* 4—5, or 0. *Stamens* 5—10, distinct, perigynous or somewhat hypogynous. *Ovary* with usually 2 diverging persistent styles, 2-celled with an axile *placenta*, or 1-celled with parietal *placentas*. *Capsule* 2-valved.

Seeds numerous. *Albumen* fleshy. — *Small, mostly herbaceous plants, frequent in northern and alpine regions.*—*Br. Fl.*

I. SAXIFRAGA, Linn. Saxifrage.

"*Calyx* superior, or inferior, or half-inferior, in 5 segments. *Petals* 5. *Stamens* 10, or sometimes 5. *Ovary* 2-celled. *Capsule* with 2 beaks, 2-celled, many-seeded."—*Br. Fl.*

1. *S. tridactylites*, L. *Rue-leaved Saxifrage*. Viscid and glandular, leaves wedge-shaped 3-cleft, uppermost bractæ undivided, stem erect paniced, pedicels single-flowered, petals scarcely longer than the sepals very small, germen inferior. *Sm. E. Fl.* ii. p. 271. *Br. Fl.* p. 154. *E. B.* t. 501. *Curt. Fl. Lond.* i. fasc. 2, t. 28.

On dry, barren, sandy or stony ground, wall-tops, rocks and roofs, but not common. *Fl.* April, May. *Fr.* June. ☉.

E. Med.—On the old walls of Quarr Abbey, in some plenty.

W. Med.—On the porch of Gatcombe church, in plenty. Gurnet common, abundant, *Miss G. Kilderbee*! Carisbrooke castle, *Dr. Martin*.

Herb brittle and succulent, growing for the most part in dense cæspitose masses, often of considerable extent. *Root* a bundle of pale slender fibres. *Stems* procumbent or prostrate below, from 3 or 4 to 8 or 10 inches in length, oppositely branched at the base and rooting near the joints, the barren and flowering shoots erect or ascending; pale and pellucid, more or less obtusely quadrangular, and as it were somewhat winged from a groove on each side and opposite to the leaves, smooth or in part slightly hairy, twice or thrice dichotomously forked at the summit, the lowermost or principal forking, almost always leafless, and bearing no blossom in its axil like the superior divisions. *Leaves* on the main stem and barren branches opposite; those beneath the ultimate, penultimate and secondary forkings at the corymbose extremities of the former, solitary; all, except the larger and paler leaves, near the base bright green, shining, a little fleshy, obscurely veined, not an inch long and broad at furthest, for the most part quite glabrous, but those towards the base, and sometimes the uppermost leaves themselves, more or less rough with short, scattered, setose hairs, semiorbicular, sometimes wider than long or subreniform, at other times inclining to ovato-rotundate, always very obtuse, abrupt, truncate or cuneate at the base or somewhat rounded, broadly and shallowly sinuato-crenate, on broad, flattish, grooved petioles, mostly shorter than themselves and subconnate. *Stipules* none. *Flowers* small, about 8 lines in diameter, greenish yellow, constituting a little leafy corymb at the summit of each of the two main forks of the stem, the uppermost of all approximate, 3 together, sessile, those in the forks of the secondary divisions solitary, often pedicellate. *Pediceanth* 4-cleft, its segments broadly ovate, subacute, nerveless. *Stamens* 8, their short erect filaments inserted in so many marginal notches around the fleshy perigynous disk; *anthers* bright yellow, at length reddish, rotundato-ovate, bursting laterally. *Germen* deeply cleft or didymous, encircled by a flat, glandular, nectariferous and crenate disk; *styles* 2, about the length of the stamens, erect, tapering, divaricate above; *stigmas* simple. *Capsule* small, green, glabrous and shining, about as long as the calyx and adnate with it in its lower half, 1-celled, 2-valved, opening between the 2 conical style-tipped lobes or beaks. *Seeds* numerous, minute, parietal, ovato-globose, with a blunt keel-like border along one-half of their greater circumference, reddish brown, hispid with short pellucid points or bristles.

II. CHRYSOSPLENIUM, Linn. Golden Saxifrage.

"*Calyx* superior, 4—5 cleft, somewhat coloured. *Corolla* 0. *Stamens* 8—10. *Ovary* 1-celled. *Capsule* 1-celled, with 2 beaks, many-seeded."—*Br. Fl.*

1. *C. oppositifolium*, L. *Opposite-leaved Golden Saxifrage*. "Leaves opposite cordate-rotundate."—*Br. Fl.* p. 156. *E. B. t.* 490.

Frequent in wet shady places, boggy thickets, alder-swamps, by springs and rivulets, on moist hedgebanks, dripping rocks, &c. *Fl.* March—May. 24.

E. Med.—Abundant in Shanklin chine, also by the brook-side below the church, and elsewhere in that vicinity. Moist places near Appuldurcombe, &c., common. Wet alder-thickets by Alverstoe. In the dell below Apse castle. In Hungerberry copse. In the Parsonage lynch, Newchurch, abundantly. Willow-bed by Mersley or Messley farm.

W. Med.—[By the side of the stream at Moortown bog, Brighstone, in great plenty, *Dr. Bell-Salter*, Edrs.]

Order XXXIV. UMBELLIFERÆ, Juss.

"*Calyx* adherent with the ovary, 5-toothed; teeth minute, often obsolete. *Corolla* of 5 petals, sometimes very unequal, the outer ones the largest. *Stamens* 5, alternate with the petals, inserted on the under side of a thick fleshy disk, at the base of the styles. *Styles* 2. *Achenes* or *carpels* 2, combined, attached near the apex to a central axis, usually separating when ripe. *Seed* solitary, pendulous. *Embryo* minute, at the base of a horny albumen.—Herbs. Leaves alternate, generally compound and embracing the stem with their sheathing bases. Flowers in umbels."—*Br. Fl.*

I. Flowers capitate, on a scaly receptacle.

I. ERYNGIUM, Linn. Eryngo.

"*Fruit* ovate, clothed with chaffy scales or bristles. *Calyx-teeth* leafy. *Petals* erect, oblong, with long inflected points. (Involucre of many leaves. Flowers in a compact head upon a scaly receptacle)."—*Br. Fl.*

The genus *Eryngium* recedes greatly in its characters from the other British genera of the natural order Umbelliferæ, by the capitate flowers, inserted on a fleshy receptacle and intermixed with paleæ; in the distinct and subulate calyx-segments; oblong, not rounded, anthers; erect, not spreading, corolla; and, lastly, in the fruit, which is clothed with bristles very unequal in size and position, a prolongation apparently of the receptacle, in which the corky carpels are as it were imbedded. In these respects, as well as in general habit, *Eryngium* seems to approach the Dipsacæ. The candied roots, considered restorative, and within the author's memory sold by confectioners, though now fallen into disuse, made a very agreeable sweetmeat, greatly superior to the stems of *Angelica*, also obsolete, but at that time familiar to juvenile palates with elecampane, candied horehound, and similar preparations, not less relished for the admirable medicinal virtues they were once held to possess.

1. *E. maritimum*, L. *Sea-side Eryngo*. *Sea Holly*. "Radical leaves roundish plaited spinous stalked, upper ones lobed palmate amplexicaul rigid, involucreal leaves 3-lobed longer than the heads, scales of the receptacle 3-cleft."—*Br. Fl.* p. 160. *E. B.* t. 718.

β. Flowers, stem and leaves pale rose-colour.

On sandy or shingly sea-beach. *Fl.* July, August. *Fr.* October. 24.

E. Med.—On the Dover, Ryde, very sparingly, nor have I seen it there at all of late. Most abundant and luxuriant amongst the hills of loose sand on St. Helen's spit. Sandown bay (towards Shanklin). Shore near E. Cowes, *Mr. Snooke*.

W. Med.—West side of the mouth of the Newtown river, plentifully. Spit at Norton, by Yarmouth, also in plenty.

β. St. Helen's spit, rare.

Root pale brown, whitish within, woody in the centre, brittle and cylindrical, running straight down in the sand to a great depth, and branching below the surface into a kind of underground stem or rhizoma. *Stems* very stout, rounded, solid, brittle, much branched, furrowed and leafy, whitish and tinged or shaded with purplish blue or rose-red, erect, ascending or partly decumbent, forming a large bushy plant 1 or 2 feet high and 3 or 4 in diameter, formidably armed with extremely acute spines or prickles. *Radical leaves* or those of the first year subreniform, on long rounded footstalks with sheathing bases, pale glaucous green, 3-lobed, the lobes waved and plaited, *those on the stem* sessile, semiamplexicaul, roundish, 3—5 lobed, the lower alternate, those at the forks, from whence the peduncles spring, three together, strongly reticulated on both sides with white veins, and more or less suffused with the red or blue colour of the stem, all of them, like those of the root, extremely stiff and rigid, waved or plaited, their white cartilaginous edges sinuato-dentate, with very sharp pungent spines. *Heads of flowers* roundish ovate or shortly conical, on long, stout, deeply furrowed peduncles in the upper forks of the branches or terminal, each head with an involucre of 5—7 large, unequal, somewhat ovate, and spinous leaves, which are longer than the flower-heads and 3- or 5-toothed. *Flowers* numerous, purplish blue, sessile, on an oblong fleshy torus or receptacle, with a tricuspidate bract or palea under each and about their own length. *Calyx*-segments ovato-lanceolate, erect, with a single stout white rib ending in a spine, and pale membranous edges. *Petals* oblong, erect, with very long inflexed points. *Stamens* much exserted, their *filaments* blue, inflexed in their upper part, after the discharge of the pollen erect; *anthers* oblong. *Styles* upright, a little compressed and channelled beneath, purplish, placed in a depression on their circular bases (*stylopodia*), which are covered with minute papillæ, and notched round their margins to receive the claws of the petals and base of the stamens. *Carpels* rather large, tawny brown, ovate, tapering below; *mericarps* corky, much compressed, crowned with the rigid very pungent calyx-teeth, bristly on their outer face, quite smooth and plane on their inner; *carpopophore* obsolete. *Seed* ovate, brownish and flattened, with a slight hollow or groove on its inner face and covered with a thin pellicle.

The var. β. is an elegant one, with flowers of a delicate pink or rose-colour, suffused over the involucre and the nerves and edges of the leaves, the upper part of both stem and branches being tinged and speckled with the same colour.

II. *Flowers umbellate*.

A. *Umbels simple or imperfectly compound*.

II. *SANICULA*, Linn. *Sanicle*.

"Fruit ovate, densely clothed with hooked prickles. *Calyx*-teeth leafy. *Petals* erect, obovate, with long inflected points. (Some flowers abortive)."—*Br. Fl.*

1. *S. europæa*, L. *Wood Sanicle*. "Lower leaves palmate with the lobes trifid incise-serrate, fertile flowers all sessile." — *Br. Fl.* p. 160. *E. B.* t. 98.

In moist shady places, woods, thickets and groves; abundant. *Fl.* May, June. 24.

III. HYDROCOTYLE, Linn. White-rot.

"Fruit of 2 flat orbicular carpels, each with 5 more or less distinct filiform ribs. *Calyx-teeth* obsolete. *Petals* ovate. (Leaves simple)." — *Br. Fl.*

1. *H. vulgaris*, L. *White-rot. Marsh Pennywort*. "Leaves peltate orbicular somewhat lobed and crenate, heads of about 5 flowers." — *Br. Fl.* p. 159. *E. B.* t. 751.

In damp marshy, boggy or peaty meadows, wet rushy pastures, on spongy heaths, sides of drains, ditches and clear rills; very frequent. *Fl.* May—August. 24.

E. Med.—Abundantly in Sandown level, on the marshy skirts of Lake common. Colwell heath. Very abundant on Apse heath, in loose moist sand.

W. Med.—[Moortown bog, Brighstone, plentifully, *Dr. Bell-Salter*, Edrs.]

B. *Umbels* compound or perfect.

a. *Fruit* neither prickly, beaked nor winged.

* *Syndicarp*† more or less laterally compressed but not flattened.

IV. CONIUM, Linn. Hemlock.

"Fruit broadly ovate. *Carpels* with 5 prominent waved or crenate ribs, without *vittæ*. *Albumen* furrowed. *Calyx-teeth* obsolete. *Petals* orbiculate. (Involucre of few leaves; partial of 3 leaves on one side)." — *Br. Fl.*

1. *C. maculatum*, L. *Common Hemlock*. "Stem glabrous spotted, leaves tripinnate, leaflets lanceolate pinnatifid with acute and often cut segments." — *Br. Fl.* p. 175. *E. B.* t. 1191. *Jacq. Fl. Aust.* ii. 36, t. 156.

In moist woods, meadows and pastures, on hedgebanks, waste ground, and amongst ruins; not of very general occurrence. *Fl.* June—August. *Fr.* August, September. 24.

E. Med.—About Ryde, rare. I have found a plant or two in the Dover marshes and about the ruins of Quarr abbey. Just out of Brading, towards Sandown. Very common at Ventnor, Bonchurch and other parts of the Undercliff. Abundantly along the top of a field-fence at the foot of Yaverland down and opposite Newlands copse. About Newchurch and Mersley or Messley. [At Brading quay, *A. G. More, Esq.* Near Carpenters, on the road to Brading; also at St. Helen's, opposite the gate of E. Daws, Esq.: *Dr. Bell-Salter*.—Edrs.]

W. Med.—Swainston park, in plenty. In the high wood at Swainston, sparingly. Abundant in hedges just out of Yarmouth, towards Shalfleet. [In a hedge at Mottistone, *Dr. Bell-Salter*, Edrs.]

† *Syndicarp* (from *συν*, *dis* and *καρπος*, implying the the union or consolidation of a double or twofold fruit), the entire fruit of an umbelliferous or umbellate plant, composed of two united *hemicarps*, *carpels* or *mericarps* of authors.

*Fruit** (cremocarpis, syndicarpis) subglobose gibbous, compressed laterally, their truncate summit crowned with the small depressed stylopode, very short spreading styles, and thick calycine margin. *Mericarps* with 5 prominent and (when ripe) whitish, narrow, acute, nearly equidistant, undulately crenate ridges, the 2 marginal ones with a deep fissure between them and their opposite fellows. *Interstices* and faces of the commissure flat, in the ripe fruit purplish and rugosely striate.

V. SMYRNIUM, Linn. Alexanders.

"*Fruit* of 2 nearly globose lobes or carpels, each with 3 dorsal, prominent, sharp ribs, the two lateral ones obsolete; interstices in the several vittæ. *Albumen* involute. *Petals* lanceolate or elliptical, with an inflected point."—*Br. Fl.*

1. *S. Olusatrum*, L. *Common Alexanders*.† "Cauline leaves ternate petiolate serrate."—*Br. Fl.* p. 175. *E. B.* t. 230.

In waste ground, amongst ruins, on hedgebanks, sea-cliffs, and in damp pastures; not unfrequent. *Fl.* May, June. *Fr.* August, September. ♂.

E. Med.—Very rare about Ryde; it grew rather plentifully in 1833 at the Binstead entrance of Quarr copse, but is now almost eradicated. Close by the old church, now a sea-mark, on the shore between St. Helen's and the Priory. Very abundant and truly wild on banks facing Steephill, far from human habitations; also at Ventnor, near the mill and elsewhere, plentifully. By Puckaster. By Roughborough farm, in plenty; near Yaverland, and between Brading and Sandown by the roadside, also in Sandown vilage. In several places along the shore between Bembridge and Culver cliff. Most abundantly on hedgebanks in several places a little E. of Bembridge, particularly in a lane just beyond, and which is quite filled with it. Sparingly on a bank by the roadside near Osborne. Lanes near Foreland form.

W. Med.—Abundant in an old churchyard just out of Yarmouth, and at Thorley turnpike-gate. In hedgebanks about Norton and Thorley. Abundant amongst the ruins of Carisbrooke castle, probably the remains of ancient cultivation. Abundant at Shorwell, on hilly ground at the entrance of the village from Newport, on the side of the road opposite North Court, possibly cultivated there formerly. Abundant in a field by Sutton. At the mouth of Brixton chine, with *Apium graveolens*, and occasionally about that village.

Plant for the most part perfectly glabrous, firm but succulent. *Root* fleshy, fusiform, slightly branched, brownish or blackish and wrinkled externally, yellowish white, very soft and spongy within, with an agreeable aromatic smell and a mild bitterish but not unpleasant taste. *Stem* erect, about 2, 3, or 4 feet high, stout (in the larger plants an inch or perhaps more in diameter at the base), teretangular, smooth and shining, hard, firm and fistulose, pale green with darker striæ, alternately branched, the branches suberect or divaricate. *Radical leaves* very large, often 18—24 inches long exclusive of the petioles, triternate, the primary and secondary divisions remote, the tertiary sometimes pinnate, their partial petioles (petiolets) compressed, flattened but sharply grooved and almost winged above, sloping to an acute keel beneath, the common petiole extremely long,

* For an account of the poisonous properties of the seeds (or carpels) of Hemlock see 'Phytologist' for February, 1843.

† From the black seeds and dark green herbage is derived its specific name,—*Olus*, a potherb, and *ater*, dark or black; the word *Smyrniūm*, *Σμυρνιον*, is said to be synonymous with *Myrrha*, Myrrh. For its English name Alexanders I am quite at a loss to account, unless so called in honour of the son of Philip of Macedon, the plant being styled by the old writers *Petroselinum Macedonicum* or *Petroselinum Alexandrinum*.

terete, hollow and nearly like the stem itself; *leaflets* opposite or partly alternate, large, about 2, 3, or 4 inches in length, variable in shape, roundish, roundish ovate or ovate-oblong, coarsely and unequally serrate, the serratures rounded and apiculate, entire or variously (often trifidly) and unequally incised, lobed, oblique, even or subcordate at base, the lateral leaflets shortly stalked or sessile, the terminal one usually a little remote and more rounded or ovate than the rest, and often deeply 3-lobed or ternately incised like those of a vine or mulberry; all deep dark green, smooth, fleshy; more or less shining and strongly veined: *stem-leaves* like those of the root but smaller, biternate, the uppermost simply ternate, their common petioles shorter than the leaves, and converted through their entire length into very large, broad, pale green, partly clasping sheaths, with numerous strong purplish ribs, their margins membranaceous and often a little woolly at their summits, which are now and then auricled. *Umbels* terminal and apparently though not really lateral from the ternate disposition of the branches, nearly spherical in an early state and on first expanding, finally spreading and flattish; *rays* numerous, stout, deeply furrowed and angled, often a little downy or woolly at their cartilaginous bases; *umbellets* small, closely crowded in flower, the rays extremely short, a few times the length of the flowers at most. *Involucral bracts*, both general and partial, extremely inconspicuous, colourless, membranaceous and scale-like, of the umbellets more numerous and very minute, often somewhat downy. *Flowers* small, partly imperfect (?), at least the styles are apparently wanting in many, though their bases or stylopodes are developed as usual. *Petals* yellowish green, roundish, incurved, keeled, with short but distinct claws, and acute but not acuminate inflexed points. *Stamens* much longer than the petals, ascending; *anthers* greenish; *pollen* white. *Styles* simple, erect or a little diverging, not spreading or recurved, short, stout and colourless; *stylopodes* yellow, very large, subdepressed and projecting. *Syndicarpis* (diachenæ) large, glabrous, brownish black when ripe, broadly orbicular or rather wider than long, crowned with the small convex stylopodes and short mostly reflexed styles, strongly contracted laterally or didymous; *hemicarps* subreniform, their lateral faces converging into the very narrow commissural face, rounded at the back with 3 sharp prominent primary *ridges*, the marginal pair and secondary ridges obsolete. *Intercostal spaces* wrinkled with several slender filiform vittæ, visible chiefly in the green or on a transverse section of the ripe fruit. *Seed* large, the albumen involute, opposite the commissure (campylospermous). *Carpophore* bipartite.

Umbels globular and petals green in the early stage of inflorescence, the former becoming flattened and spreading, the latter white, as they expand. This change from an herbaceous to a white colour is common to some other plants, as the Guelder Rose, Hydrangea, &c.

The herb was formerly much esteemed for the table, boiled and eaten like greens, even in the time of Dioscorides. Gerarde says, "The root here of is in our age served to the table raw for a sallade herbe," but its use is now superseded by Celery.

From its occurring so frequently about the ruins of monasteries and churches, many have supposed it to be not indigenous, but I am of opinion that it is an aboriginal in Britain and most of the western and maritime parts of Europe below 56°, beyond which it is scarcely found wild.

This plant has long survived the memory of its cultivation here as a garden vegetable, notwithstanding its continual occurrence about inhabited places proves that it must once have been in general use in this island.

VI. APIUM, Linn. Celery.

"*Flowers* perfect. *Fruit* roundish-ovate, didymous; carpels with 5 slender ribs, with single *vittæ* between them and two on the suture. *Carpophore* entire. *Calyx-teeth* obsolete. *Petals* roundish, entire, with a small involute or inflexed point. (*Involucres none*)."—*Br. Fl.*

1. *A. graveolens*, L. *Wild Celery*. *Smallage*. "Point of petals involute."—*Br. Fl.* p. 161. *E. B. t.* 1210.

In wet marshy places, sides of ditches, pools and streams, in various parts of the island, plentiful; most commonly near salt water. *Fl.* July—September. *Fr.* September, October. ♂.

E. Med.—Ditches on the Dover, Ryde. Near Quarr abbey, also at the mouth of the little brook between Ryde and Binstead. At Bembridge, at Lane end.

W. Med.—Salt-ditches in Yarmouth and Freshwater marshes, abundant. In great plenty along the stream called the Newtown river, above Shalfleet, where the water is, I believe, quite fresh. Common at Brixton. By the Medina, a little below Newport, in several places; and at Coppings bridge. Common on wet slipped land below the road from Niton to Blackgang. Cliffs between the new Lighthouse and Blackgang, *Dr. Martin*. By mill-ponds and mill-streams at Carisbrooke and Newport.

Herb smooth and shining, usually of a pale green, especially in salt-marshes. *Root* tapering. *Stems* 2—3 feet high, erect, deeply furrowed and angular, branched. *Lower leaves* biternate, on long footstalks, with wedge-shaped, 3-lobed, obtusely cut and notched leaflets; *upper ones* simply ternate, their leaflets narrower, acutely incised and lobed. *Umbels* lateral and terminal, of about 10 or 12 long general rays, and more numerous very short partial ones, both destitute of involucre (sometimes, it is said, a single involucre leaf is present under the general umbel). *Flowers* very small, white with a tinge of green, all perfect. *Fruit* (syndicarps) extremely small for the size of the plant, not a line in length, very broadly ovate or nearly orbicular, dark purplish brown when ripe; *hemicarps* rounded at back, contracted a little in front, with 5 pale, equidistant, filiform, wavy ridges, the lateral pair marginal, interstices with single? or more? very indistinct vittæ. *Stylopodes* small, conical. *Carpophore* entire.

VII. PETROSELINUM, Hoffm. Parsley.

"*Fruit* ovate. *Carpels* with 5 slender ribs, and vittæ in the interstices; *carpophore* bipartite. *Calyx-teeth* obsolete. *Petals* roundish, with a narrow incurved point. (Involucre of few, partial of many, leaves)."—*Br. Fl.*

*1. *P. sativum*, Hoffm. *Common or Garden Parsley*. "Leaves tripinnate shining, lower leaflets ovate-cuneate trifid and toothed, upper ones ternate lanceolate nearly entire, partial involucre filiform."—*Br. Fl.* p. 162. *E. B. S. t.* 2793. *Apium Petroselinum*, L.

Naturalized here and there on walls, rocks, banks and waste ground, but quite persistent where once established. *Fl.* July, August. *Fr.* September. ♂.

E. Med.—On a wall by the roadside from Niton towards Blackgang, just beyond Buddle. Hedgebank on Apse heath. On the stone facing of the steep bank below the church at Newchurch, abundant, *Dr. Bell-Salter !!!* In Luccombe chine, *Miss G. Kilderbee !!!*

W. Med.—Walls of Carisbrooke castle, *W. Wilson Saunders, Esq.*

Herb perfectly glabrous. *Root* long, white, simple and tapering. *Stem* erect, about 2 feet high, round, striated, branched. *Leaves* dark green, those at and near the root paler or yellowish, on long footstalks, triternate, the leaflets ovate or somewhat heart-shaped, deeply and acutely cut and lobed; upper ones biternate, on short petioles, their segments lanceolate, simple or lobed, the terminal ones mostly trifid. *Umbels* lateral and terminal, flattish, on long stalks, many-rayed, with a general involucre of very few, often solitary, linear leaflets: *umbellules* of numerous short spreading rays, and with an involucre of many linear-lanceolate, unequal, mucronate leaflets. *Flowers* small, greenish yellow, all perfect. *Petals*

with long inflexed points. *Styles* at first erect and very short, after flowering rather long, spreading and recurved. *Mericarps* subcompressed and contracted inwards, with 5 equidistant, filiform, pale *ridges* on each, the lateral pair marginal, separated by an elliptical cleft or cavity from their opposite fellows, but meeting at each end; *interstices* univittate, with a pair of *vittæ* at the back or face of the hemicarp; *stylopodes* short, conical, crowned with the closely reflexed styles.

The common garden Parsley is indigenous to various countries of the S. of Europe, but now quite naturalized in some parts of England. On the shingly beach at Hurst castle, about a mile from our shores, it is abundant and perfectly spontaneous, and I have remarked it gathered as from a garden for domestic use.

2. *P. segetum*, Koch. *Corn Parsley*. "Radical leaves pinnated, leaflets nearly sessile ovate lobed cut and serrated, upper leaves with 1—3 linear leaflets, rays of the umbels few and unequal."—*Br. Fl.* p. 162. Sison, *L.*: *E. B.* t. 228. *Curt. Br. Entom.* xv. t. et fol. 691.

In cultivated fields, on waste ground and hedgebanks; very frequent on chalk or clay in various parts of the island, though seldom to be found for any length of time in the same places. *Fl.* July. *Fr.* October, November. ♂. or ♀.

A singularly wiry and slender plant, with much the habit of *Bupleurum tenuissimum*, and remarkable for the very small few-rayed umbels.

Entire plant extremely smooth and glabrous, dull glaucous-green, very weakly aromatic. *Root* long, whitish, tapering, woody, more or less sparingly branched or nearly simple. *Stems* 1 or more, terete, finely striated, filled with pith, often very numerous, the central one mostly erect or nearly so, the lateral usually widely spreading on all sides, and ascending or decumbent at base; 1, 2, or 3 feet in height, lax, wavy and rigid, repeatedly alternately and irregularly divided in a dichotomous manner, the branches extremely unequal, divaricate, spreading and wiry. *Leaves* chiefly radical, remaining green through the winter, and withering away for the most part when the plant is about to flower, spreading flat upon the ground in rosulate tufts; *stem-leaves* subtending the forks of the branches, the lower ones similar to those of the root but narrower and smaller, on lax slightly clasping petioles, whose margins are involute above, the higher ones gradually diminishing till reduced at the summit to a few very narrow cleft or forked segments, or finally to a simple undivided *petiole*. *Umbels* terminal, at first somewhat lax, exceedingly unequal in size and in the length and number (from about 3 or 4 to 8 or 10) of their rays, which last differ as much amongst themselves in their relative length in each umbel; those in the interior of the latter often extremely contracted, the outer rays often an inch and a half in length after flowering; all usually erecto-patent in fruit; *umbellets* equally irregular in the length and number of their rays, but with these last much shorter, more crowded, one or more of the inner rays commonly obsolete, the fruit being quite sessile. *General involucrel bracts* few, subappressed, extremely unequal in length amongst themselves and with respect to the rays, fleshy, subulate, ribbed, mucronulate, the tips purplish, their margins near the base very narrowly scariose, *partial ones* equally variable in length, but smaller, broader and lanceolate, otherwise similar. *Flowers* very minute, about a line in diameter, hermaphrodite. *Calyx* of 5 minute, blunt, spreading, fleshy points crowning the ovary. *Petals* ovate, white or more commonly pale purple, very broad at base, with very strongly involute, scarcely channelled, broad and truncate points. *Filaments* white, ascending or incurved; *anthers* large, full purple; *pollen* white. *Styles* extremely short, obtuse and conical, white or purple; *stylopodes* much depressed. *Syndicarps* of a whitish brown colour when ripe, broadly ovato-elliptical, $1\frac{1}{2}$ line in length and nearly as wide; *hemicarps* slightly compressed and contracted laterally, with 5 very prominent, equidistant, filiform *ridges* (the 2 lateral marginal), and as many linear *vittæ* betwixt them, with a pair on the face of the commissure, all running the whole length of the fruit (not abbreviated), attenuated at each extremity (not dilated);

secondary (primary, *Koch*) *ridges* obsolete. *Carpophore* divided, but the divisions usually closing together after the fruit drops, appearing at first sight entire.

This species appears to be mostly biennial with us, the seeds coming up in autumn, and producing bunches of radical leaves, lying flat and spreading in a circular form on the ground, which remain through the winter. The spring following, the flowering stem is produced and the plant dies off entirely, the root-leaves decaying long before the seed ripens.

The plant would probably be found well worthy of cultivation as a winter salad, as it remains green and tender throughout the severest season of the year, and the leaves are without acrimony.

VIII. HELOSCIADIUM, *Koch*. Marshwort.

"Fruit broadly ovate or oblong. *Carpels* with 5, slender, prominent ribs, with single vittæ between them; *carpophore* entire. *Calyx-teeth* small or obsolete. *Petals* ovate, obtuse with an apiculus."—*Br. Fl.*

1. *H. nodiflorum*, *K.* *Procumbent Marshwort*. "Stem procumbent creeping, leaves pinnate, leaflets ovate or ovate-lanceolate unequally serrate, umbels opposite to the leaves.

"*α*. Larger, leaflets bluntly serrate, umbels longer than the peduncles or nearly sessile. *Sium*, *L.*: *E. B.* t. 639.

"*β*. Smaller, leaflets acutely serrate, umbels shorter than the peduncles. *Sium repens*, *L.*: *E. B.* t. 1431."—*Br. Fl.* p. 162. *Fl. Dan.* ix. t. 1514. *Jacq. Fl. Aust.* iii. 34, t. 260.

Abundant in shallow ditches and pools, clear rills, brooks and plashy spring-heads. *Fl.* July—October. 24.

β. In wet spongy places and by shallow brooks. Colwell heath. Wet places about Ryde, *W. Wilson Saunders, Esq.* On St. Helen's green?

A very troublesome plant in our marsh-drains and ditches, which it soon fills completely if not cleared out at stated times. The smaller leaves look like those of *Watercress*, and are liable to be gathered for it by ignorant persons, but I do not know that they are deleterious in their nature. Like *Enanthe crocata* this is quite a western species, and nearly unknown to the inland Floras of the Continent. It however occurs very abundantly in wet places in and about Charleston, S.C., though I suspect originally imported; the leaves of the American specimens, as I have seen them, are smaller than is usual in the European plant.

2. *H. inundatum*, *Koch.* *Least Marshwort*. "Stems creeping, lower leaves capillaceo-multipartite, upper ones pinnatifid, umbels generally of 2 rays."—*Br. Fl.* p. 163. *Sium*, *E. B.* t. 227.

Floating in pools, ditches and plashes, or creeping on their partially exsiccated margins; rare. *Fl.* June, July. 24.

E. Med.—Pond at the foot of Bleak Down, near the branching off of the roads to Chale, Niton and Godshill, in great plenty.

W. Med.—In a little pool surrounded by willow-bushes at the back of Thorness wood, and not far from Great-Thorness farm, very abundant. In a pool on a common called Goldens, in the parish of Freshwater. In a pool with *Sparganium simplex*, by a cottage on the skirts of a fir-plantation adjoining Burnet wood. In a little pit near the sea between Newtown and East Hampstead?

IX. Sison, Linn. Bastard Stone Parsley.

"Fruit ovate. Carpels with 5 ribs, and single clavate vittæ between them. Calyx-teeth obsolete. Petals broadly obcordate, deeply notched and curved, with an inflexed point. (Involucres of few leaves; partial subdimidiate)."—Br. Fl.

1. S. Amomum, L. Hedge Bastard.* Stone Parsley. Br. Fl. p. 163. E. B. t. 954.

In hedges, on banks, by roadsides, and about the borders of fields, pastures and woods; abundant over a great part of the island, on chalk or clay. Fl. August, September. Fr. September, October. ♂.

E. Med.—Extremely common about Ryde, often nearly 5 feet high, as by the roadside about a mile from Brading (where I have gathered it nearly 7 feet high). Common about Brading and Sandown.

W. Med.—About W. Cowes. Common about Yarmouth and Thorley.

Plant perfectly smooth and glabrous, pale or often of a dark green colour. Root whitish, long, slender and tapering, straight or flexuose, hard, woody and rigid, simple or slightly branched. Stem solitary, erect, wavy and rigid, filled entirely with a white pith, from 1 or 2 to 4 or 5 feet high, round, slender, finely grooved or striate, much and repeatedly branched, the branches alternate, erectopatent, wiry and flexuose. Leaves radical, or confined on the stem to the forks of the branches, imparipinnate, the earlier root-leaves and those of the first year withering before the plant comes into flower; leaflets about 4 pairs, remote, sessile or subsessile, of a somewhat firm dry texture, ovate-oblong or sublanceolate, pointed or obtuse, unevenly incised, the serratures rounded, the cartilaginous margins produced into a small mucronate point directed forwards; lower stem-leaves similar to those at the root, on very long, deeply channelled, semicylindrical petioles, which are strongly ribbed, dilated and clasping at base but not inflated, those higher up on continually shortening footstalks, the leaflets smaller, narrower, more deeply incised and lobed, at length at the summit of the stem pinnately pinnatifid, with very narrow linear segments. Umbels small, terminal and lateral, on long, slender, wiry, naked peduncles, at first drooping, afterwards erect; primary rays mostly 4 or 5, rarely 3 or 6, unequal, the central very often but not always the shortest; of the umbellets extremely short, the inner flowers being almost sessile. Bracts of the general involucre 2—5 (mostly 3), very much shorter than the rays, lanceolate or linear-lanceolate, mucronate, scariously margined below, the edges erect or inflexed; of the partial involucre 4 or 5 and broader, otherwise similar. Calyx obsolete. Petals small, white and equal, broadly obcordate, with a large strongly inflexed point. Stamens short, white, incurved. Styles (in flower) very short, almost obsolete; stigmas hemispherical; stylopodes large, whitish, depressed, semiorbicular.

The smell of the herbage is strong and unpleasant, and the flavour of the seeds bitter and aromatic.

Scarcely known as a native of Scotland, and not yet found in Ireland.

X. ÆGOPodium, Linn. Goutweed.

"Fruit oblong, crowned with the conical bases of the deflexed styles. Carpels with 5 slender ridges, without vittæ. Calyx-teeth obsolete. Petals obcordate, with an inflexed point. (Involucre 0)."—Br. Fl.

* Called Spikenard by the country people of Hants, at least about Petersfield, as I learn from Miss E. Sibley.

1. *Æ. Podagraria*, L. *Goutweed*. *Herb Gerard*. *Vect. Ground or Dwarf Elder*.* *Br. Fl.* p. 163. *E. B. t.* 940.

In damp shady waste or cultivated places, gardens, orchards, groves, and on moist hedgebanks: not very common. *Fl.* June—August. 24.

E. Med.—At Newchurch. Just out of Shanklin on the road to Bonchurch, and at Montpellier House, Ventnor. At Alverstton, on a bank by the roadside going towards Bordwood. At French mill. In extremely small quantity on the former site of Little Hardingshute farm, close to the entrance-gate of the meadow, where *Tulipa sylvestris* grows. Sparingly at Lake, on a garden hedgebank facing the Stag inn. In a shady part of the S.E. corner of Appuldurcombe park, by Wroxall. Sandford. Very common at Godshill. In an orchard at Hartsash, near Newchurch. About Knighton Manor House. In Mrs. Vine's grounds at Puckaster. Orchard at Apse farm. At Old Park, in plenty, *Albert Hambrough, Esq.*

W. Med.—Area of Carisbrooke castle, in plenty. In a lane called Clerken, under Carisbrooke castle. In the singular hollow way by the roadside at Idlecombe. All over the grounds at North Court, Shorwell, in profusion. Just out of Calbourne towards Brixton. Between Buccombe and Shorwell. Norton. Freshwater. About Gatcomb in various places. At Swainston, sparingly.

This plant is by no means generally distributed in the South of England, but in the North it abounds, and at Glasgow is the prevailing Umbelliferous plant about the outskirts of the town. Mr. J. T. Mackay has the same remark on its distribution in Ireland.

XI. *BUNUM*, Linn. Earthnut.

"Fruit oblong, crowned with the bases of the diverging or nearly straight styles. Carpels with 5 slender, obtuse ribs, and 2—3 elongated linear vittæ between them, and none upon the suture. Calyx-teeth obsolete. Petals obcordate, with an inflected point."—*Br. Fl.*

1. *B. flexuosum*, With. *Common or Lesser Earthnut*. *Kipper. Pignut*. "Stem-leaves few nearly sessile with linear segments, general involucre 0 or 1—2 leaved, styles erect with a conical base."—*Br. Fl.* p. 164. *E. B. t.* 988.

Abundant throughout the island in meadows, pastures, groves and grassy thickets. *Fl.* May, June. *Fr.* July. 24.

Though the tubers of this plant are a delicacy that "boyish appetite disdains not," there is an acrimony, an "aliquid amari," with their sweetness, better fitted to the digestion of the respectable quadrupeds whose name they share, than for Christian bipeds of tender years. Dr. Johnston, in his 'Flora of Berwick-on-Tweed,' tells us these roots are an article of commerce in Sweden, but they are probably those of the Great Earthnut (*B. Bulbo-castanum*), much prized in Italy, and perhaps exported to Sweden, where neither that nor the present species is indigenous. The former however is a native of Norway (Fl. Dan.), and has lately been discovered at Cherry Hinton, near Cambridge.

XII. *PIMPINELLA*, Linn. Burnet Saxifrage.

"Fruit ovate, crowned with the swollen base of the reflexed styles. Carpels with 5 slender ribs, the interstices furrowed, with 2—3 long linear vittæ; suture with vittæ. Calyx-teeth obsolete. Petals obcordate, with an inflexed point. (Involucres 0)." — *Br. Fl.*

* The common name throughout Hants, and I believe in other counties.

1. *P. Saxifraga*, L. *Common Burnet Saxifrage*. "Radical leaves pinnate, their leaflets roundish sharply serrate or cut, those of the stem bipinnate with linear segments, stems terete, fruit glabrous."—*Br. Fl.* p. 165. *E. B.* t. 407. *Jacq. Fl. Aust.* iv. 50, t. 395.

In dry fields and pastures; abundant everywhere. *Fl.* July—September. 24.

XIII. SIUM, Linn. Water Parsnep.

"Fruit ovate or globose, subdidymous, crowned with the depressed base of the reflexed styles. Carpels with 5 rather obtuse ribs, and 2 or more vittæ between them: suture with vittæ. Calyx-teeth small or obsolete. Petals obcordate with an inflected point. (Partial involucre of many leaves)."—*Br. Fl.*

1. *S. angustifolium*, L. *Narrow-leaved Water Parsnep*. "Stem erect, leaflets unequally lobed and serrated, umbels pedunculate opposite to the leaves."—*Br. Fl.* p. 165. *E. B.* t. 139.

In ditches, pools and other watery places; rare. *Fl.* July, August. 24.

E. Med.—In a pool surrounded by trees on the landslip between St. Catherine's point and Blackgang, in great plenty; also in the meadow in which *Cyperus* grows near Old Castle point. By a little stream near the church at Ventnor, *Miss Hadfields!* In a splashy spot by the roadside between Old Park and St. Lawrence, a single plant, 1838.

W. Med.—Ditches in the marsh at Freshwater, in several places, but of small size.

XIV. BUPLEURUM, Linn. Hare's-ear.

"Fruit ovate-oblong, crowned with the depressed base of the styles. Carpels with 5 more or less prominent ribs, with or without vittæ. Calyx-teeth obsolete. Petals roundish, entire with an involute retuse broad point. (Leaves undivided)."—*Br. Fl.*

1. *B. rotundifolium*, L. *Common Hare's-ear. Thorow-wax*. "Stem branched above, universal involucre wanting, partial involucre mucronate, leaves perfoliate roundish-oval."—*Br. Fl.* p. 166. *E. B.* t. 99.

In chalky cornfields, but extremely local. *Fl.* June, July. ☉.

E. Med.—In a cornfield above Sandown bay, at its North-eastern end and loftiest elevation, of several hundred feet.

W. Med.—In a wheatfield opposite Eades's farm, near Calbourne, in great plenty, 1845. Amongst wheat in various places about Thorley, *Rev. James Penfold* and *Mr. Robert Gibbs!!!* Plentifully in 1840 in cornfields near Wellow, towards Tapuel and Stonewell farms. Colwell, 1838. Near Yarmouth, *Rev. W. T. Bree* (in litt.).

Herb perfectly glabrous. Root annual, rigid, tapering, with few fibres. Stem erect, from 3 or 4 inches to 2 feet in height, round, smooth, purplish and shining, branched chiefly unilaterally. Leaves truly but eccentrically perfoliate, roundish oval, the lowermost somewhat oblong or obovate, nearly erect, glaucous-green, often edged with purple, many-ribbed, quite smooth and entire, with a small point or mucro. General involucre none. Umbels terminal, flat, of few very short rays. Umbellules about 8—12 flowered, much shorter than the 4 or 5 broadly ovate, very unequal mucronate and purple-edged leaves of their involucre, which when the

fruit ripens become erect and partially enclose the carpels. *Flowers* very small. *Petals* golden yellow, inflexed. *Styles* very short and minute, deciduous; *stylopodium* plane. *Stamens* incurved, mostly falling away; *anthers* yellow. *Fruit* ovate, much narrower than in the next species, purplish; *mericarps* with 3 thin, sharp, not very prominent *ridges*, and 2 less distinct marginal ones, the interstices with a deep furrow, and wrinkled but not granulated.

The aspect of this singular but handsome annual reminds one of an *Euphorbia* rather than of an umbellate plant. In America, where it is rare and probably introduced, it is called Modesty (*Torrey and Gray*, Fl. of N. Amer., and *Darlington*, Fl. Cest.)

2. *B. tenuissimum*, L. *Slender Hare's-ear*. "Stem very much branched, leaves linear acute, umbels very minute few-flowered, partial ones usually shorter than the setaceous involucre." — *Br. Fl.* p. 166. *E. B. t.* 478.

In dry maritime pastures, on banks, and along ditches in salt-marshes, but not very common. *Fl.* July—September. *Fr.* October. ☉.

E. Med. — Shore at E. Cowes, opposite E. Cowes castle. Salt-marsh near Quarr, Mr. Thos. Meehan !!! Abundant on the inner face of the sea-bank in Brading harbour, W. Wilson Saunders, Esq. !!!

W. Med. — Near Gurnet bay. Common along the edges of the brine-pits of the salterns by Newtown. By the Medina, between W. Cowes and Medham. In salt-marsh pastures at Barnfield, near Yarmouth, in considerable plenty.

A slender quite smooth plant, very inconspicuous amongst the herbage of salt-marshes, variable in size, from 4 to 18 inches high, nearly simple or much branched from the base. *Root* slender and tapering. *Stem* one or more, very slender, wiry, zigzag, striated and somewhat angular, a little glaucous, with ascending and widely spreading branches. *Leaves* an inch or two in length, a little stiff and rigid, linear-lanceolate, subfalcate, acute, 3-ribbed, sessile and almost clasping, but not decurrent. *Umbels* lateral and terminal, very minute, of 3 or 4 flowers, surrounded by an *involucre* of 5 linear acute leaves, with incurved tips, and (mostly) longer than the flowers. *Petals* yellow, inflexed. *Styles* very short. *Fruit* covered with rough granulations, broadly ovate, compressed and a little contracted laterally; *mericarps* each with 3 distant prominent *ridges*, and 2 smaller marginal ones, their interstices without *vittæ*. *Carpophore* divided.

The reported acrid and unpleasant taste and smell of this plant my own experience does not confirm. Of scent it has little or none, and when chewed gives a very slight impression only of warmth and bitterness. Of the four species of *Bupleurum* found wild in England, not one has yet been discovered in Scotland or Ireland; even the present and most northerly of the European species, which ranges in Sweden to 57°, does not in Britain extend higher than Durham. It is not essentially a maritime species, though less commonly found far inland. I have seen specimens gathered in Worcestershire, near Malvern, by my friend Albert Hambrough, Esq.

** *Syndicarpis* ovate or elliptical, rounded, on a transverse section.

XV. *ÆNANTHE*, Linn. Water-dropwort.

"*Fruit* ovate-cylindrical, crowned with the long nearly straight styles. *Carpels* more or less corky, with 5 blunt, convex ribs, and single *vittæ* in the interstices. *Calyx-teeth* lanceolate. *Petals* obcordate, with an inflected point, radiant. (Partial involucre of many rays). *Flowers* of the circumference on long stalks and sterile: those of the centre sessile, or nearly so, and fertile." — *Br. Fl.*

1. *Æ. fistulosa*, L. *Common Water-dropwort*. "Root stoloniferous, stem-leaves pinnated, their main stalk as well as the stem cylindrical fistulose, umbels of very few rays, fruit turbinate."—*Br. Fl.* p. 167. *E. B. t.* 363.

In ditches, drains, the margins of pools, and in wet meadows, but far from common. *Fl.* June—September. 24.

E. Med.—Sparingly in some ditches on the northern boundary of Lake common. In several parts of Sandown level. Brading marshes. Ditches around Sandown fort, *Miss Hadfield* !!!

W. Med.—Marsh-ditches near Freshwater gate.

Plant of a pale subglaucous green, very fragile, weak and flexible, soon collapsing on being gathered, remarkably tubular and fistulose. *Stem* erect or procumbent below, sometimes altogether reclining. *Fruit* crowded into small globose heads, quite sessile, nearly as large as in *Æ. crocata*, whitish, mostly purplish brown at top, corky; *syndicarpa*s turbinate or obconic, obtusely and unequally 4- or 5-angled, the faces furrowed and striate; their summit flat, crowned with the very long spreading or recurved styles and subulate calyx-segments; *hemisarpa*s closely adhering by their inner faces, which are quite plane and smooth, not separating when ripe as in our other species, their lower end a little sloped away just at the point of insertion on the thickened summit of the ray or common pedicel, exterior to which last, surrounding it, are several abortive fruits on long peduncles (outer rays of the umbellets); *carpopore* obsolete.

2. *Æ. pimpinelloides*, L. *Parsley Water-dropwort*. "Leaflets and segments very acute or mucronate, those of the radical leaves much broader and shorter, fruit cylindrical with an enlarged callos base."—*Br. Fl.* p. 167. *Jacq. Fl. Aust. Icon.* iv. t. 394 (certe). *Fl. Dan.* ix. t. 1454.

β. Leaves all linear, universal involucre none (or imperfect), root often with sessile elliptical tubers. *Æ. peucedanifolia*, *Pollich, Fl. Pal.*

In dry or moist but not marshy pastures, on banks, along hedges and roadsides; a very general and often most abundant species. *Fl.* June—September. *Fr.* September, October. 24.

E. Med.—Plentiful about Ryde, as in Monckton mead, about St. John's, &c. Churchyard of St. Thomas's church, Ryde. About Cowes.

W. Med.—Frequent in various places about Brixton. In profusion this season (1846) about Yarmouth, Thorley, Calbourne, and most other parts, even growing plentifully in some places amongst the wheat-crops, as at Calbourne, &c. Yarmouth. Freshwater.

β. In similar places with α. and also in salt-marshes, but much more rarely. In a wet thicket by the Wootton river. In a meadow near Thorley, and a single large plant growing in the water at Freshwater Gate, only a few plants observed in either locality. Between Yarmouth and Alum bay, *Rev. G. Smith*. The avenue to Freshwater House produces an *Enanthe* which appears to be this variety. Very plentiful, and completely the plant of Pollich, in a meadow under St. John's wood at its upper end, between it and the brook.

Plant perfectly smooth and glabrous throughout. *Root* a bunch of dark brown, rigid, mostly simple fibres, which descend nearly vertically, and usually swell out at various parts of their length, but generally at or near their extremity, into small, ovate, oblong, globose or fusiform, sometimes compressed, whitish and fleshy knots or tubers, beyond which the fibre is continued to a finely tapering point: these tubers are produced on seedlings of the first year, and whilst still very young and small, as I have ascertained by cultivation, and are mere enlargements of the amylaceous tissue of the root. *Stem* 1 or more, erect, from 6 or 8 inches to 2 or 3 feet high, slender, wavy, firm, cylindrical, mostly purplish at bottom, in my specimens distinctly fistulose; in the upper part completely tubular,

in the lower with a central perforation only through the white cellular tissue; pale glaucous-green, very deeply and sharply angular and sulcate, sparingly distantly and alternately branched, the branches erect, patent or somewhat ascending, often remarkably curved or tortuous in the nascent state or before flowering. *Leaves* mostly at the base of the stem, those higher up confined to the forkings of the latter; *radical leaves* produced late in the year and growing through the winter, spreading or prostrate, crowded and imbricated by their broad, sheathing, white or greenish, ribbed bases, soon decaying after the plant comes into flower or even earlier, deep dull green above, much paler beneath, succulent, their stout terete petioles suddenly dilated into a broad membranaceous wing at each side, which at the point of their divergence forms an elevated, abrupt, rounded apex, bi- or tri-pinnatisect, extremely variable in size and shape, and in the degree and mode of division of the leaflets; in outline the leaves are of an oblong-triangular form, those nearest the root plane, usually lying flat upon the ground and soonest decaying; *the next above* merely spreading, and with more or less erect divisions, like those on the stem, lasting till the flowering time; all, including their petioles, about a span long at most, usually much shorter; *leaflets* extremely liable to vary in the degree and mode of division, even on the same leaf, so as to make it almost impossible to define them with precision or to describe their multifarious modifications: on the very lowest of the root-leaves they are generally pretty constantly of a roundish or ovate figure, entire and wedge-shaped at base, and in their less deeply incised state very closely resemble on a reduced scale the leaflets of *Æ. crocata*; they are however quite as often more minutely and profoundly pinnatisect than in that plant, and even sometimes finely pinnatifid, with very narrow, linear-lanceolate, acute segments; *superior stem-leaves* few, distant, erect, longer and narrower than those at the bottom, and much more uniform in their mode of division and form of the leaflets. *Petioles* very variable in length. *Umbels* flat-tish or convex only, never hemispherical, solitary and terminal, on very long leafless peduncles, from about 1½ to 2 inches in diameter, compact, but lobed or uneven in their circumscription, their primary rays rather numerous, short, much thickened and more erect in fruit, deeply furrowed and angular; *umbellets* pretty numerous, dense-flowered and crowded. *General involucre* of several linear, very narrow and tapering leaflets, unequal and variable in length, but usually much shorter than the rays; *partial* ones many-leaved, their leaflets like those of the general involucre, but longer in proportion to the rays, which they often equal in length. *Flowers* small, inodorous. *Calyx* distinct, of 5 tooth-like segments, of which the 2 exterior are much the largest, acute and somewhat acuminate. *Petals* white,* very unequal. *Stamens* rather long, and, including the round *anthers*, white, the latter at length cream-coloured; *filaments* wavy. *Styles* whitish, tapering, erect, on tumid punctate *stylopodes*. *Fruit* crowded into a flat level-topped or slightly convex umbel.† *Syndicarpis* crowded, the exterior on short incrassated pedicels, the inner sessile or nearly so, subteretely pentangular and prismatic, of uniform breadth throughout or subcylindrical, very flat or truncate at top, crowned with the fleshy calyx, and long, subulate, erect or diverging styles and their conical bases (*stylopodes*); abrupt at their lower end, which is more or less enlarged into a whitish tumid callosity; when ripe of a nut-brown colour; *hemicarps* closely united by their flat commissural faces, not contracted inwards, hence presenting on their inner side a truly rectangular figure. *Carpophore* (none according to some authors), bipartite, deciduous, falling away with the fruit, its two laminae remaining firmly attached along a groove to their respective hemicarps.

The primordial leaves, or those immediately succeeding the cotyledonous leaflets, are in this species distinctly cuneate and incised or subpinnatifid, whereas in

* The petals of α , when placed beside those of β , as I find it at the mouth of Wootton river, have a faint cast of yellowish green, only observable by contrast.

† In *Æ. Lachenalii* the fruit of each umbellet forms a convex or hemispherical head.

Æ. Lachenalii the primordial leaves have the leaflets 3-cleft, the segments obovate or oblong and for the most part quite entire. The fresh radical tubers have a nutty flavour, with a slight impression of heat and acrimony, but are neither unpalatable nor, I believe, deleterious when eaten, and might perhaps by cultivation be improved and rendered an agreeable esculent. Lloyd ('*Flore des Environs de Nantes*') says that the tubers of *Æ. peucedanifolia* are eaten by children in Brittany as those of *Bunium flexuosum* are in our own country.

β. The general involucre in this plant is, I believe, seldom absolutely wanting, but is usually reduced to one or two linear leaflets, often so small as to be overlooked; hence DeCandolle very properly says "*involucro subnullo*." The root is very variable in appearance, sometimes with, much oftener without tubers, and when growing in muddy ditches, as I have found it at Freshwater, becomes a bundle of innumerable fibres. The leaflets of my Isle-of-Wight specimens are in general much longer than they are represented in E. B. or by Pollich; and I find examples by the Yar, below the bridge at Freshwater, in the strongest and wettest salt-marsh, passing into α. and always wanting the tubers said to be essential to *Æ. peucedanifolia*. One or more of the radical leaves have elongated or linear leaflets, whilst those on the remaining root-leaves are short, ovate-lanceolate, or even approaching to wedge-shaped, as in the common state of *Æ. pimpinelloides*. I am quite convinced that neither the tubers on the root, nor the presence or absence of the general involucre, are of any value; and the only remaining distinction, derived from the form of the radical leaves, is as little to be relied upon. I have gathered it at Bulwerhithe, near Hastings, and so far from being confined to the vicinity of fresh water, my own experience would lead me to pronounce it to be a mere salt-marsh variety of *Æ. pimpinelloides*, since it is in such situations I find it displaying most perfectly the characters assigned to it by Pollich, the original author of the species *Æ. peucedanifolia*.*

3. *Æ. Lachenalii*, Gmel.† *Parsley Water-dropwort*. "Leaflets of the lower leaves linear obovate or cuneate-trifid obtuse mucronate, of the upper ones acute, fruit turbinate or oblong narrowest and without a callosity at the base."—*Br. Fl.* p. 167. *E. B. v. t.* 347 (sub *Æ. pimpinelloides*). *Fl. Dan.* ix. t. 1454. *Lej. et Court. Comp. Fl.* i. p. 235.

In low wet and especially salt-marsh meadows and pastures; a far less common plant in this island than the one last described. *Fl.* June—September. *Fr.* October, November. 24.

E. Med.—Abundant on the flat grassy shore on the W. side of the Wootton river, at its mouth. [St. Helen's spit; South side of Brading harbour: *A. G. More, Esq.*—Edrs.]

W. Med.—On the salt-marsh and pastures adjoining along the East side of the Yar, in considerable plenty, and precisely the same plant as that at the Wootton river, noticed. All over that part of Wilmingham heath which borders the salt-marsh shores of the Yar, growing amongst the furze &c., in comparatively dry soil. All over the marsh-meadows at Easton, Freshwater Gate.

Root a bundle of whitish or brownish simple fibres, partly cylindrical and partly incrassated by very gradual enlargement into an oblong or fusiform shape towards their extremities.† *Stem* as in *Æ. pimpinelloides*, but somewhat less deeply

* [From the notes published in the '*Phytologist*,' vol. iii. p. 405, by our author, and which we believe were penned subsequently to the text above, it appears that he afterwards came to the conclusion that Pollich's plant is not so likely to be a variety of *Æ. pimpinelloides* as of the following, *Æ. Lachenalii*, or even a distinct species.—Edrs.]

† For excellent descriptive characters of this species and *Æ. pimpinelloides*, see M. J. Lloyd's '*Flore de la Loire Inférieure*,' 12mo, Nantes, 1844, pp. 113 and 114.

‡ This enlargement of the radical fibres I suspect does not take place till the

though still very strongly and acutely angulato-sulcate and striate, at least in the lower part, terete and purplish at the very bottom, completely filled with pith to about as high up as the second or third node, from whence it becomes fistulose, and higher still tubular.* *Leaves* scarcely differing from those exhibited in some varieties of *Æ. pimpinelloides*. *Umbels* with much longer primary rays than in *Æ. pimpinelloides*, hence broader and flatter; sometimes the rays are so long as to separate the *umbellets* very widely asunder: these last are similar to those of *Æ. pimpinelloides*, but the flowers are whiter,† the petals a little tinged with pink, and the anthers purplish, as are the entire *umbellets* themselves not unfrequently; the length of the primary rays vary extremely, from about 1 to 2 inches or even more, sometimes rendering the *umbellets* approximate, but I have not yet seen them so close as to present the compact tufted umbel of the other species; they are also, I think, in general less numerous than in that; the outermost or radiant flowers are upon longer stalks than in the other, and are mostly if not always destitute of stamens, and do not perfect fruit; their petals are, as remarked by Babington, roundish obcordate, with a very short narrow claw, and cleft for about half their length from the top. Bracts of the *general involucre* similar to and equally variable in size and number with the last, sometimes wanting altogether on individual umbels of the same plant, though numerous on the rest; of the *partial* or *umbelle* involucres always present and numerous. *Fruit* about the size of the last, crowded in the *umbellets* into convex or subhemispherical heads (not dense-topped as in *Æ. pimpinelloides*), on short thick pedicels, the inner sessile or very nearly so; palish or bright red before maturity, when ripe brown as in that. *Syndicarpis* subterete, oblong-obovoid or subturbinate, being rounded at top, and from thence attenuated downwards to the base, which is not enlarged and callous; tipped with the *styles*, which are shorter than in *Æ. pimpinelloides*, and the small very erect *calyx*-segments.

Æ. Lachenalii unites to the general structure and habit of *Æ. pimpinelloides* the fructification of *Æ. crocata*, of which it presents, on a much reduced scale, an almost exact counterpart. It is a later plant than either of these last, and does not ripen seed until October and November.

4. *Æ. crocata*, L. *Hemlock Water-dropwort*. Vect. *Belderr-root*. "Leaves tri-quadri-pinnate, leaflets stalked cuneate-ovate or roundish cut and serrated, those of the upper leaves narrower, fruit cylindrical oblong without a callous base." — *Br. Fl.* p. 168. *E. B. t.* 2313.

In deep swampy or boggy woods and thickets, in low wet meadows, shallow pools, and along ditches, drains and brooks; almost everywhere. *Fl.* June, July. *Fr.* August, September. 24.

A large rank-growing and very poisonous plant, often filling up entirely our shallow streams and drains, and overshadowing with its dark lurid foliage the dank rotten soil of our deep gloomy thickets.

The geographical distribution of *Æ. crocata* embraces the western parts of

second or perhaps the third year, as many large plants do not exhibit these clavate dilatations at all, and, it may be, never acquire them at any period of their duration.

* I suspect, as I shall have occasion to show in the case of the common Fennel, that little or no dependence is to be placed on the solidity of the cellular tissue or pith in the stems of Umbelliferae. I use the word fistulose to imply a central perforation; when the hollow occupies the entire interior of the stem I call it hollow.

† At least in these, my first-described specimens from Wootton river, and so I find them in the second station, near Yarmouth, where the plant agrees in every particular with that at the former place. It is remarkable that Pollich, in the description of his *Æ. peucedanifolia*, uses the words "*flores albisimi*."

Europe from Portugal to Scotland, but it is unknown in the interior of the European continent, as Germany, &c. The roots, as I learn from the peasants of this island, prove speedily fatal to swine, that are tempted, perhaps by some sweetness of flavour they possess, to grub them out of the soft soil; and one man related an instance, coming under his own knowledge, of several of these animals being thus lost through having been driven into the marsh-meadows, where the plant abounded. The same person remarked to me that cows eat the herbage with impunity, and this seems correct, as I remarked all the plants of this species in a meadow near Easton to be quite stripped of their leaves, and with nothing but the bare stems remaining,—I suppose by the cattle that were grazing in the field at the time.

The specific name was given to this species from the deep yellow (crocatous) juice stated by many authors to exude from the root and stem when cut across, but the existence of which is denied by others. Dr. Bell-Salter assures me that about Poole it emits, both from the stem and root, a very deep yellow, thick and strongly scented juice; and that he has remarked the same juice, though paler in colour, in plants growing at Bembridge, in this island. The roots resemble those of the Dahlia, and instances have been related to me of their having been sold to credulous persons for that handsome plant.

Enanthe Phellandrium (in pools and ditches), thought to have been found in the Isle of Wight by the Rev. G. E. Smith and Mr. Curtis, both at the back of the island. See Curt. Br. Entom. xi. fol. 506. It grows abundantly in marsh-ditches at Gomer Pond, near Gosport.

XVI. ÆTHUSA, Linn. Fool's Parsley.

“Fruit ovate-globose. Carpels with 5 acute ribs; interstices deeply acutangular with single vittæ. Calyx-teeth minute. Petals obcordate, with an inflexed point. (Partial involucre of 1—3 unilateral drooping or spreading leaves.)”—Br. Fl.

1. *Æ. Cynapium*, L. Common Fool's Parsley. Lesser Hemlock. “Leaflets wedge-shaped decurrent with lanceolate bluntish segments, rays of the umbel nearly equal, involucre none, partial one longer than the umbel.”—Br. Fl. p. 169. E. B. t. 1192.

In waste and cultivated ground, cornfields, neglected weedy gardens, and about fences &c. Fl. June?—September. ☉.

Root whitish, fusiform, in the larger plants more or less branched and woody, in the smaller and younger simple and succulent. Stem erect, rather slender, from 5 or 6 inches to 1 or 2 or even 3 feet in height, terete, finely angulate-striate, hollow, more or less branched, the branches erect; pale green, with a slightly glaucous bloom removable by friction, often spotted or suffused with purple, especially below. Leaves dark or sometimes light green, much paler and mostly shining beneath, bipinnate or subtripinnate, the lower leaves on longish, semiterete, caniculate petioles, with ribbed, sheathing, not inflated bases, with white membranous borders, the superior sessile but with similar sheaths; primary pinnæ stalked, the basal pair remote; secondary pinnæ or leaflets shortly petiolate or attenuated and confluent below, flat, mostly ovate or ovate-lanceolate, cuneate at base, deeply and for the most part trifidly pinnatisect, the terminal lobe in general again once or even twice trifidly incised or pinnatifid, the ultimate segments in all more or less ovate-elliptical or sub lanceolate, acute or obtuse, tipped with a small bristly point, their margins thickened, spinulose, cartilaginous. Umbels lateral and terminal opposite the leaves, flat or a little convex, rather small, from about $1\frac{1}{2}$ to 2 or $2\frac{1}{2}$ inches across, on long, naked, deeply furrowed stalks; general umbel of 5 or more rays, longer than the other more numerous and interior ones, roughly setose, pubescent on their grooved upper side, those of the partial umbels (umbellets) subterete and glabrous or nearly so. Bracts of the general involucre

none (occasionally one, *Bertol.*); of the *partial* ones 3—5, linear, unilateral, pendant or deflexed, mucronate-acuminate, longer than the umbellules, or in starved specimens about equal to the latter, shortly margined and membranous at base. *Flowers* white, all perfect. *Calyx* very minute. *Petals* profoundly and unequally obcordate, their points involute, the exterior larger and radiant; *anthers* white or pinkish. *Styles* at first white, erect or spreading, at length reflexed and purplish, their bases (*stylopodes*) tumid, lobed, and dotted with depressed points. *Fruit* (*syndicarps*) about 2 lines in length, ovato-globose, glabrous, crowned with the reflexed styles; *mericarps* with 5 stout, very prominent, acutely keeled, corky *ridges*, of which the 2 lateral or marginal are thicker, dimidiate and narrowly winged at the commissure; *vittæ* solitary between each ridge and only apparent on a transverse section, the posterior flat face of each mericarp with a very distinct pair towards the centre, of a pellucid yellow and linear not clavate form, converging but not meeting below, approximate above and separated only by the bipartite *carpophore*.

XVII. FœNICULUM, Hoffm. Fennel.

“*Fruit* oblong. *Carpels* with 5 prominent, obtuse ribs, with single *vittæ* in the interstices. *Styles* short. *Calyx-teeth* obsolete. *Petals* roundish, entire, the involute segment obtuse. (*Involucres* 0).”—*Br. Fl.*

“Above the lowly plants it towers,
The Fennel with its yellow flowers,
And in an earlier age than ours
Was gifted with the wondrous powers
Lost vision to restore;
It gave new strength and fearless mood,
And gladiators, fierce and rude,
Mingled it in their daily food;
And he who battled and subdued
The wreath of Fennel wore.”

†? 1. *F. vulgare*, Gærtn. *Common Fennel*. “Leaves biternate, leaflets pinnatifid, segments awl-shaped or filiform.”—*Br. Fl.* p. 169. *Anethum Fœniculum*, L.: *E. B.* t. 1208.

On dry banks, waste ground, and cliffs by the sea, but not common. *Fl.* July—September. *Fr.* October. 24.

E. Med.—In Binstead stone-pits, pretty plentiful in one spot, but I suspect not truly wild there. Naturalized on waste ground near the Infant School, Ryde. Common and possibly indigenous on steep banks facing the sea at Ventnor. On a chalky bank by Upper-Morton farm, near Brading, 1849, in some plenty; naturalized no doubt from the farm-garden, as I do not remember to have seen it there previously. Between Chine cottage and Rose cliff, under a steep bank on which *Prunus Cerasus* grows abundantly, 1840.

W. Med.—Naturalized abundantly in Northwood park, on the side of an old garden. Hedgebank near Gurnet bay. [Apparently wild in many places at Brighstone, growing wherever the soft sand-rock is exposed, *Dr. Bell-Salter*.—*Edrs.*]

Syndicarps ovato-oblong, glaucous, crowned with the very short reflexed styles; *hemicarps* with 5 equidistant, prominent, thick *ridges*, of which the 2 lateral are quite marginal, and more obtuse than the 3 dorsal ridges; *vittæ* linear, very distinct, single between each ridge, and a pair on the inner face of each hemicarp, one on either side of the *carpophore*, which Sir W. Hooker's figure does not represent, but which I find constant in all my specimens.

In consequence of some remarks by Mr. Babington in *Man. of Brit. Bot.*, I

examined the stems of numerous individual plants of Fennel in several wild localities, and find the stem usually with a perforation in the centre, mostly of small diameter, sometimes in the upper, sometimes in the lower part of the stem, the rest and sometimes the entire stem being completely filled with pith throughout.

One of the finest and most aromatic of our *Umbelliferae*, growing in a chalky soil to 6 or 7 feet high, with a diameter of an inch or more at the base of the stem.

Very abundant and truly wild in many places along the S. coast of England, but not indigenous to Scotland, nor at a distance from the coast, either with us or on the Continent.*

Marschall von Bieberstein (Fl. Taur.) relates that in November, 1796, when a Russian army lay in the plain of Schirvan, before the town of Schamakia, on the Caspian, they found this plant so abundantly that for eight days they scarcely used any firewood but the dried stems. The Sweet or Italian Fennel is a mere variety of the common species, with its aroma a little heightened perhaps by cultivation; yet the wild plant can hardly be excelled in the delicacy of its smell and flavour, more grateful than in any other British species of this natural order.

XVIII. SILAUS, Besser. Pepper Saxifrage.

"Fruit oval. Carpels with 5 sharp, somewhat winged ribs, with many vittæ in the interstices. Calyx obsolete. Petals obovate, subemarginate with an inflected point, appendaged; or sessile and truncated at the base. (Partial involucre of many leaves)."—*Br. Fl.*

1. *S. pratensis*, Bess. *Meadow Pepper Saxifrage*. "Leaves tripinnate, leaflets linear-lanceolate opposite, general involucre of 1 or 2 leaves."—*Br. Fl.* p. 170. *Peucedanum Silaus*, L.: *E. B.* t. 2142. *Jacq. Fl. Aust.* i. 12, t. 15.

In rather moist meadows and pastures, open grassy places in woods, and along roadsides, hedgebanks, &c.; frequent in very many parts of the island. *Fl.* June—September. 2l.

E. Med.—About Ryde in a little patch of wood by the lodge-gate of Ryde house, and between Quarr abbey and the Fish-houses. Common in woods about Cowes, between Cowes and Wootton bridge.

W. Med.—Frequent about Yarmouth, towards Ningwood, &c. Northwood park, Miss G. Kilderbee!

Herb glabrous in every part. Root stout, long, tapering and cylindrical, blackish brown, and transversely wrinkled and furrowed externally, very white, soft and spongy within, dividing at the summit in the larger plants into several crowns, bristly with the filamentous remains of former root-leaves. Stem 1 or more, erect, from 1 to 2 or 3 feet high, occasionally twice as tall, slightly zigzag or waved, rounded and subterete below, angular-sulcate above, often purplish at base and along the angles, with several distant, alternate, erect branches, and completely filled with the large white pith. Radical leaves often very large, of a triangular

* Fennel is a favourite food of the larvæ of the great swallow-tail butterfly (*Papilio Machaon*), which is occasionally seen in this island. I have never remarked it on the wing here myself, but have seen a specimen taken off the forest-land (Parkhurst) many years since, and am told it was not then uncommon. In a letter from the Rev. W. T. Bree that gentleman tells me he captured six or seven specimens of this fine insect near Yarmouth, and saw a few more in different parts. Whether the insect breeds with us, or flies over from the opposite coast of Hampshire, I do not know; if the former, the larva ought probably to be sought for on *Daucus Carota*.

outline, bi-tripinnate, on extremely long, rounded, subangular petioles, that expand into short flat-ribbed and sheathing bases, with membranous margins; *leaflets* deep grass-green above, paler and often somewhat shining beneath, a little folded or channelled along the course of the midrib above, sessile, narrow-lanceolate or sublinear, attenuated at both ends, simple or deeply bi- or tripartite, the terminal one almost always 3-cleft, very acute and mucronate, the apex purplish, entire but cartilaginous-spinulose along the somewhat deflexed edges and keel-like midrib underneath; *stem-leaves* distant, subtending the forks of the branches, the inferior like those of the root, but rapidly becoming smaller, less compound and more petiolate as they ascend, the uppermost often reduced to a simple leaflet. *Umbels* rather small, loose, of about from 5 to 10 unequal primary rays, which, like those of the umbellets, are furrowed and more or less cartilaginous-scabrous on the angles; *umbellets* flattish or slightly convex, many-rayed. Bracts of the *general involucre* either wanting or of from 1 to 3 unequal, linear, acute, membranous-edged leaflets, much shorter than the primary rays; of the *umbellets* numerous, broader and somewhat concave, acuminate, with dark tips. *Flowers* all perfect and equal. *Calyx* extremely minute, hardly visible. *Petals* yellowish or greenish white, sometimes dashed with purplish red, suborbicular, traversed longitudinally above by a sharp ridge with a depression on each side, their points broad, inflexed, caniculate, and mostly somewhat 3-lobed or subtrifid at apex. *Styles* at first very small, short, greenish and erect, afterwards somewhat larger, spreading and purplish; *stylopodes* very large and projecting in the flower, greenish yellow, plano-convex, crenate-lobed, at length purplish red and narrower than the ripe fruit. *Syndicarps* ovate, a little compressed, crowned with the retuse styles and their red bases (stylopodia); *mericarps* separated by a deep fissure, each with 5 sharp, prominent, equidistant, almost wing-like *ridges*, the two lateral ones marginal and rather less prominent; *vittæ* described as numerous by Koch and others, of which 4 are commissural (Leighton), but they are so indistinct, in the fruit at least, as to be nearly invisible, nor does Mr. Leighton's excellent transverse section show any. *Carpophore* bipartite.

A handsome plant, possessing a powerful aromatic odour like the rind of the bitter orange.

XIX. CRITHMUM, Linn. Samphire.

"*Fruit* elliptical. *Carpels* spongy, with 5 elevated, sharp, somewhat winged *ribs*, and, as well as the loose *seed*, abundantly marked with *vittæ*. *Calyx-teeth* obsolete. *Petals* elliptical, entire, involute. (*Involucre of many leaves*)."—Br. Fl.

1. *C. maritimum*, L. *Sea Samphire*. Br. Fl. p. 171. E. B. t. 819.

On rocks and cliffs by the sea; very abundant, but chiefly along the South and South-western coasts of the island. Fl. June—September. Fr. August—October. 24.

E. Med.—At Ventnor. Very common on most parts of the cliffs between Ventnor, as near Steephill cove, at Old Park, &c. In Sandown bay. In clefts of the rock behind Bonchurch, at a considerable distance from the sea, in several places plentifully. Bembridge cliffs, B. T. W.

W. Med.—On the cliffs at Freshwater Gate and Scratchell's bay. Chalky cliffs from Compton westward. Abundant on the cliffs at Freshwater, Mr. E. Lees (in Baxter's Gen. of Fl. Pls.)

Fruit (*syndicarps*) ovate-elliptical, convex, purplish, about $2\frac{1}{2}$ lines in length, crowned with the small conical *stylopodes*, and short mostly recurved *styles*, glabrous; *hemicarps* with 5 thin, elevated, slightly winged, equidistant *ridges*, of which the lateral pair are quite marginal, the interstices and back plane, with numerous *vittæ*. *Seeds* brown, narrow-oblong, wrinkled, with many *vittæ*, when mature free by the shrinking (?) of the now corky interior substance of the fruit.

The warm aromatic pickle prepared with this plant is greatly esteemed and commonly seen at table in this island. The herb minced is also served up with melted butter in lieu of caper-sauce. For the purpose of pickling it is annually collected in large quantity from the cliffs at Freshwater, and sent up to some wholesale houses in London, by the cliffsmen, who make samphire-gathering a part of their summer occupation, and for which, when cleaned and sorted, they receive 4s. per bushel. It is put up in casks with sea-water, for its better preservation on the journey, and probably also to extract any bitterness it may contain. For smaller quantities the charge for collecting is 1s. per gallon. The samphire is considered in perfection when just about to flower or towards the end of May.

[b. *Fruit more or less prickly, beaked or winged.*]

* *Syndicarps much and dorsally compressed, broadly elliptical or nearly orbicular, from the wing-like dilatation of the marginal ridges.*

XX. ANGELICA, Linn. Angelica.

"*Fruit flat, with 2 wings on each side. Carpels with 3 elevated dorsal ribs, the lateral ones spreading into broad wings. Calyx-teeth small or obsolete. Petals elliptical-lanceolate, entire and inflexed at the point.*"—*Br. Fl.*

1. *A. sylvestris*, L. *Wild Angelica*. "Leaflets equal ovate serrated at the base somewhat lobed, calyx-teeth obsolete, fruit with the interstices of the ridges having single vittæ, seed adhering without vittæ."—*Br. Fl.* p. 172. *E. B.* t. 1128.

In damp, swampy or boggy woods and thickets, osier-beds, alder-cars, by riversides, in wet hedges and other watery places; very common. *Fl.* August, September. *Fr.* September, October. 24.

Carpels nearly orbicular from the broadly winged lateral ridges; *mericarps* flatish, the 3 dorsal *ridges* bluntish, keeled, close together, the 2 lateral ones marginal, very thick, attenuated to a membranous very broad wing; *vittæ* single between the ridges, with 2 often confluent commissural ones.

XXI. PASTINACA, Linn. Parsnip.

"*Fruit flat, with a broad border. Carpels with 3 dorsal and 2 distant marginal ribs on the border, with single filiform vittæ, the length of the fruit, in the interstices. Calyx-teeth nearly obsolete. Petals roundish, entire, involute, with a sharp point. (Involucres 0, or of few leaves). Differs from Heracleum in the entire involute petals, and filiform, not clubbed, vittæ.*"—*Br. Fl.*

1. *P. sativum*, L. *Common Parsnip*. "Stem furrowed, leaves pinnate downy beneath, leaflets ovate cut and serrated, ultimate one 3-lobed, involucres none, fruit oval."—*Br. Fl.* p. 173. *E. B.* t. 556.

In pastures and waste places, by roadsides, the borders of fields, on hedgebanks, and in woods; abundantly in most of the chalky districts. *Fl.* July August. *Fr.* September. 3.

E. Med.—About Binstead stone-pits. Abundant between Luccombe and Bonchurch. Sandown bay.

W. Med.—Abundantly around the cornfields about Yarmouth, Freshwater, Calbourne, Thorley, &c.

Fruit (syndicarps) broadly elliptical or suborbicular, much compressed, nearly plane, slightly pubescent.

Our farmers would probably find it worth their while to grow the Parsnip on a large scale as a root-crop instead of Mangold Wurzel, since the soil and climate of this island are so propitious to its spontaneous production.

XXII. HERACLEUM, Linn. Cow-parship.

"*Fruit* flat, with a broad border. *Carpels* with 3 dorsal ribs and 2 distant marginal ones, and rather short club-shaped *vittæ* in the interstices. *Petals* obcordate, point inflected; outer ones radiant. (Involucre deciduous; partial of many leaves)." — *Br. Fl.*

1. *H. Sphondylium*, L. Common Cow-parship. Hogweed. "Leaves pinnated rough hairy, leaflets pinnatifid cut sinuated, ultimate one somewhat palmated, petals unequal, fruit glabrous nearly orbicular." — *Br. Fl.* p. 173. *E. B.* t. 939.

β. Leaves more deeply cut, with narrower lobes. *H. angustifolium*, Sm.

γ. Flowers white.

On moist hedgebanks, in damp pastures, woods, borders of fields and waste bushy places; common. *Fl.* June. *Fr.* August.

β. Near Ryde.

γ. Marvel copse, near Newport.

Fruit (syndicarps) large, about 5 lines in length, glabrous, pale whitish brown when ripe, ovate-orbicular, very thin and flat, their emarginate summit crowned with the *styles* and the *stylopodes*; *mericarps* with 5 filiform ridges on their outer face, of which 3 traverse the centre from end to end, the outer pair forming an ellipse, the middle one straight; two lateral ridges remote, placed near to and following the outline of the dilated margin, and uniting below with the rest; face of the commissure with 3 ridges, that correspond with the central one, and lateral pair on the exterior surface; *interstices* plane; *vittæ* single between the ridges, 4 on the outer, 2 on the dorsal face, on the upper part of each, dimidiate, inversely clavate or sublinear, obtuse or pointed, subarcuate, the dorsal pair shorter, broader and blunter, not reaching the summit. *Carpophore* bipartite. *Seed* broadly elliptical, flat.

** *Syndicarps* armed with rows of straight, hooked or incurved prickles, and shorter intermediate bristles; not beaked.

XXIII. DAUCUS, Linn. Carrot.

"*Fruit* dorsally compressed, elliptic-oblong. *Carpels* with 3 dorsal ribs and 2 in the inner face, bristly, the 4 interstices very prominent, and crowned with a single row of long flat prickles. *Albumen* solid. *Petals* radiant, those of the ray deeply bifid. (Involucres often pinnatifid)." — *Br. Fl.*

1. *D. Carota*,* L. Common Carrot. Bird's-nest. Leaves tri-pinnate, leaflets pinnatisect the segments lanceolate-acute, umbels

* *Car* is a Celtic word for red, and appears in several compounds expressing objects of that colour, as carmine, carnation, from caro, carnis, *flesh*; cornelian, carbo, a burning coal, from its redness; also, it is said, the French word *Garance*, madder, the root of which dyes a fine red. Hence, too, Carrot means literally red root.

flat or convex in flower concave in fruit, general involucre shorter than the flowering umbels simply pinnatifid the segments subulate, flowers partly imperfect, petals of the exterior flowers unequal, bristles of the fruit* with 1 or 2 simple spreading points. *Br. Fl.* p. 178. *E. B. t.* 1174.

In pastures, by roadsides and borders of fields; one of the most common species of its order. *Fl.* June—August. *Fr.* September, October. ♂.

The root of the wild Carrot is long, white, tapering, simple or a little branched, of a tough woody texture, and, except in its sweetish odour, quite unlike the esteemed succulent it becomes under cultivation. *Stem* about 2 feet high, erect, round, furrowed, with many upright branches, rough and hoary all over with harsh bristly hairs. *Leaves* alternate, on broad, sheathing, ribbed petioles, bi- or subtripinnate, hairy, their segments lanceolate or linear-lanceolate, acute, cut, bristle-pointed. *Umbels* at the end of the long leafless branches, 2 or 3 inches broad, flat or a little convex before the fruit forms, after which the rather numerous rays of the umbels and their *umbellules* approximate, and curving inwards form with the bristly fruit a hollow inverted cone, aptly compared to a bird's-nest, whence its popular name. *General involucre* shorter than the fully flowering umbel, simple, of several pinnatifid mostly 3-cleft leaves, their segments very acute; *partial* of similar but smaller, mostly entire leaflets, with membranous edges, one or two sometimes divided. *Flowers* small, white, sometimes reddish. *Petals* rather unequal, especially in the exterior flowers of the umbel, deeply notched and inflexed. *Stamens* wanting or partly deficient, except in the interior flowers of the umbellules, which are perfect. *Styles* erect, straight, spreading and reflexed in fruit; *stigmas* roundish. Exactly in the centre of each umbel there is usually a ray, bearing a few involucral leaves under a dark red solitary flower, with styles of the same colour, but only the rudiments of stamens, and not perfecting the seed. *Carpels* (syndicarps) ovate; *hemicarps* each with 4 rows of long spines occupying the primary† *ridges*, one pair lateral or marginal, the other 2 rows on the face of the hemicarp, all in a single series, their points either minutely toothed or bifurcate; the 3 secondary‡ or intermediate *costæ* armed with a double row of small slender spines, spreading in opposite directions, and like the larger aculei quite distinct to their base.

That the present species is the origin of the garden Carrot has been disputed by some, on the ground that by cultivation the root acquires neither the colour nor flavour of that esteemed vegetable, not considering that the qualities for which the Carrot is prized have been developed, by the skill and care of the horticulturist, through successive ages, until the limits of perfection were attained, and permanency of improvement insured by propagation from seed of the stock so ameliorated.

Mr. Bentham told me that a French botanist, whose name has escaped my recollection, obtained a very good eatable Carrot after a few years' cultivation and raising from seed of the wild plant. The culture of this valuable esculent as a root-crop, and winter food for cows and horses, is not much attended to in this island, Turnips being very generally used in their place.

Very closely related to this (*D. Carota*) is *D. pusillus*, Mx., of N. America, which I have gathered abundantly in dry places at Charleston and Savannah. That species differs, however, materially, in its more erect branches, more finely and deeply divided leaflets; in its very compound, doubly or triply pinnatifid involucre, which are about equal to the flowering umbel; in its smaller umbels, which are cupped or concave, both in blossom and seed; in its minute flowers, all of which, even to the central blossom, are perfect and isopetalous; and, lastly,

* For figures of the fruit, see Hook. *Br. Fl.* t. iv. fig. 12.; Leighton, Shropsh. *Fl.* p. 126; Gaudin, *Helv.* ii. t. 3.

† Secondary ridges, Koch.

‡ Primary ridges, Koch.

in having the bristles of the fruit glochidiate or stellately barbed, with several (about 5) minute, deflexed, simple points. The plant has the aroma of the common Carrot, and might by cultivation afford an agreeable variety for the table.

2. *D. maritimus*, With. *Sea-side Carrot*. "Prickles of the fruit usually flattened contiguous and united at the base, leaves tripinnate, leaflets pinnatifid lanceolate fleshy, segments rounded, umbels convex or flat when in seed.

"*a*. Petals entire white or fringed with red. *E. B.* t. 2560.

"*β*. Petals fringed greenish yellow."—*Br. Fl.* p. 178.

On cliffs, banks, and dry waste ground by the sea, not uncommon. *Fl.* June—August. ♂.

E. Med.—In the Undercliff, between Ventnor and St. Lawrence. At Bonchurch, in plenty. Abundantly on the steep banks at the upper end of Sandown bay, and in all the chalky fields and banks at the back of it and behind the Culvers.

W. Med.—On the ledge of the cliffs to the westward of Freshwater Gate, called Rose Hall Green, in great profusion; apparently the plant intended in Babington's 'Manual,' 2nd ed. p. 145, as probably the *D. gingidium* of Linn. (or perhaps the *D. hispidus* of Desfontaines), growing here to an extremely large size, the umbels often forming perfect globes, the leaflets varying very much in breadth.

This plant, which I suppose to be nothing more than a variety of *D. Carota*, and which is probably commonly mistaken* for the true *D. maritimus*, is chiefly distinguished from the former by its very stout and densely hispid stem, the very hairy leaves, with broader segments; the umbels also are usually much larger than in *D. Carota*, sometimes $4\frac{1}{2}$ inches wide, flat or almost perfectly hemispherical, with or without a coloured abortive flower in the centre, concave in fruit, but less deeply than in the common form of *D. Carota*; the unexpanded flowers are mostly of a rose-red colour, but becoming subsequently white. The Rev. G. E. Smith tells me he has observed various gradations between the two forms in this island.

XXIV. *TORILIS*, Adans. Hedge Parsley.

"Fruit slightly laterally compressed. Carpels with 3 dorsal inconspicuous bristly ribs, and 2 in the inner face of the carpels, the interstices scarcely prominent, clothed with prickles, each with a single vitta. Albumen furrowed. Petals obcordate, outer ones radiant. (Partial involucre of many leaves)."—*Br. Fl.*

1. *T. Anthriscus*, Gærtn. *Upright Hedge Parsley*. "Stem erect branched, leaves bipinnate, leaflets lanceolate incise-serrate attenuate, umbels stalked terminal, involucre of many small subulate leaves."—*Br. Fl.* p. 180. *Caucalis*, *E. B.* t. 987. *Jacq. Fl. Aust.* iii. 34, t. 261.

* [This remark is at variance with the entry of the above stations, under the name of *D. maritimus*, With. Such discrepancies would of course have been corrected had the lamented author himself finally revised his MSS. for the press. From some critical remarks from his pen, in the 'Phytologist' (Phytol. iii. p. 410), we believe his mature opinion to have been that the various Isle-of-Wight maritime forms of *Daucus* are not the *D. maritimus* of Withering, but *D. gingidium*, Linn., as understood by Babington, and *D. hispidus*, Desf. Both these two latter forms however, as also Withering's plant, he believed to be only varieties of *D. Carota*, Linn.—*Edrs.*]

On banks, in waste places, along hedges and borders of fields, woods, &c.; very common. *Fl.* July—September. *Fr.* September, October. 2f.

Root slender, tapering, rigid, usually more branched and crooked than in *T. infesta*, whitish and woody as in that. *Stem* erect, from 1 or 2 to 4 or 5 feet high, filled with pith like the following, terete below, somewhat angular above, finely striate, the striæ purplish, more or less rough, especially upwards, with retrorse, appressed, rigid hairs from the very root,* considerably but far less copiously branched, the branches long, slender, wavy, erecto-patent, rough and angular, sparingly forked. *Leaves* comparatively few and distant, from the great length of the internodes, mostly confined to and subtending the forks of the branches, in form nearly exactly the same as in the following but larger, the lowermost a span long, somewhat less rough and of a brighter green, the segments of the *leaflets* rather broader and less deeply and acutely incised, at least in those of the inferior stem- and root-leaves, for the superior leaves are precisely similar in both species. *General involucre* of about as many leaves as rays to the umbel or fewer, and not half their length, unequal, hispid, subappressed, and shaped with long taper points; the *partial involucre* about equal in length and number to the outer rays of the umbellets, similar to the general ones. *Umbels* solitary, terminal, on very long slender peduncles or naked branches, much larger than those of the following, 1½ to 2 inches or more wide, lax and open, about 8—10 rayed, the rays slender,† hispid with appressed bristles directed upwards; *umbellets* flat, many-rayed, the outer rays longer than the fruit (in *T. infesta* they are much shorter), hispid, spreading in flower, erect in fruit. *Flowers* somewhat larger than in *T. infesta*, the exterior ones in each umbellet hermaphrodite, but often, as it seems to me, wanting the stamens, unless it be that these latter are early deciduous, the interior flowers staminate only, and differing less from the outer in size than in *T. infesta*. *Calyx*-teeth triangular, acuminate, often purplish at the tips. *Petals* white or commonly tinged with rose-red, a little bristly at the back; those of the exterior flowers flat and radiant, lobed and shaped as in the following, but less unequal in size; of the interior or staminate blossoms somewhat smaller than of the outer, and less flattened, otherwise very similar. *Stamens* about as long as the corolla; *filaments* white; *anthers* purplish; *pollen* white. *Styles* exactly as in *T. infesta*, and, as in that, elongated and recurved over the fruit; *stylopodes* often purplish like the anthers. *Syndicarpa*s quite similar in form to those of *T. infesta* but smaller, the 3 dorsal or primary (secondary, Koch) *ridges* obsolete; these latter beset with only a double row of scabrous prickles, that are shorter and more distant than in *T. infesta*, and terminate in a simple straight or erect, not spreading or deflexed point: the interposed rows of white appressed spinules in *T. infesta* are quite wanting to this species. *Carpophore* deeply bipartite.

The fruit, as Curtis remarks, has a stronger aroma than that of *T. infesta*.

2. *T. infesta*, Spr. *Spreading Hedge Parsley*. "Leaves bipinnate, leaflets ovate incise-pinnatifid serrated, umbels stalked terminal, involucre wanting or of one, partial of few subulate leaves." —*Br. Fl.* p. 180. *Caucalis*, *E. B.* t. 1314. *Jacq. Fl. Aust.* i. 28, t. 46.

In waste and cultivated ground, by waysides, and especially amongst corn; abundantly. *Fl.* June—September. *Fr.* September, October. ☉.

Much too plentiful in our stiff wheat-lands about Ryde.

Root annual, whitish, long, slender, tapering, rigid and woody. *Stem* erect, very hard and rigid, from a foot or much under that to 18 or 20 inches high,

* The base of the stem is often subglabrous, but wanting the smoothness and polish observable in *T. infesta*.

† The rays are much slenderer and less rigid than in *T. infesta*, and hence the umbels droop sometimes after gathering.

round, striated, quite smooth, glabrous and often purplish at base, filled with a tissue of fine white pentagonal or hexagonal cells; gradually becoming roughish upwards with appressed retrorse bristles, mostly very copiously and divaricately branched, often from the very base, at other times simple for some distance from the root, branches repeatedly forked, patent or widely spreading, diffuse or even decumbent, somewhat angular, scabrous with retrorse bristles, those from the very base of the stem long, straight and erect. *Leaves* pale grayish green or often finally purplish, roughish and ciliated on both sides with white appressed bristles pointing forwards, the lowermost withering early, of a lighter and brighter green than those nearer the summit of the stem, and like those of the centre ovate or oblong in circumscription, from about 3 to 6 inches in length, doubly pinnato-pinnatifid, on rather long lax or drooping and sheathing petioles, with narrow inflexed or involute membranous margins; *leaflets* from 5 to 7 or even 9, opposite, in pairs with a terminal one, the pairs remote, the lowermost pair on longish, the rest on shorter stalks, ovate or ovato-lanceolate, pinnato-pinnatifid, the lobes deeply cut and serrate, the serratures lanceolate, very acute, mucronulate, the terminal leaflet usually ternately lobed or decomposed: uppermost leaves smaller and narrower, the leaflets usually 5, of the highest of all 3, the terminal leaflet much produced, simply and sharply serrate, entire or slightly compounded only, their points in general more or less recurved. *General involucre*s either quite wanting or reduced to 1 or 2 appressed very small scales, or to a single subulate leaf; *partial involucre*s of several very unequal subulate leaves, one usually subtending each fruit-bearing pedicel, as long or longer than the latter, and pretty closely applied to it. *Umbels* opposite the leaves, on longish scabrous peduncles or naked branches, few- (2 to 6 or 7) rayed, the rays unequal, much shorter than the peduncles, scabrous like the stem and branches, but in a reversed direction, the bristles pointing upwards; *umbellets* many-rayed, the rays shorter than the mature fruit, the inner one bearing staminate flowers only, and hence concealed as the fruit enlarges. *Flowers* small, the exterior above (4 to 8 or 9) hermaphrodite, the rest staminate. *Calyx* of 5 minute, triangular, diaphanous, acute teeth, often purple at their tips, scabrous. *Petals* white, or as compared with those of *T. Anthriscus* cream-coloured, sometimes slightly tinged with red, a little bristly at the back, the 3 exterior ones of the outermost flowers much the largest, roundish obovate, deeply and unequally emarginate, flat and with shorter incurved points, the remaining two and all those of the interior flowers broadly obcordate, with broad, ligulate, channelled, inflexed summits, rather enlarged than tapering at the end, which is very abrupt, truncate, apiculate or even emarginate. *Stamens* and *pollen* white. *Styles* short, erect or diverging, colourless, globoso-capitate, obsolete in the inner flowers; a little elongated, widely spreading and even reflexed in fruit; *stylopodes* greenish, not coloured. (In *T. Anthriscus* the styles and stylopode are usually, though not always, purplish like the anthers.) *Syndicarps* about 2 or 3 lines in length, broadly ovate-elliptical, laterally compressed, at first mostly purplish from the colour of the immature prickles, when quite ripe reddish gray or ash-colour, crowned with the reflexed styles; *hemicarps* densely beset on the secondary ridges and interstices with spreading, ascending or recurved, retrorsely scabrous prickles, which are mostly minutely glochidiate, with a simple spreading or deflexed point, quadriserial, each series 3- or 4-rowed, the 2 lateral series marginal; primary *ridges* filiform, beset with straight erect or subappressed white spinules, the lateral pair on the face of the commissure; *albumen* grooved in front (campylospermous). *Carpophore* bipartite.

The plant has a sweetish but faint unpleasant odour, and the root a warm and somewhat pungent smell.

3. *T. nodosa*, Gært. *Knotted Hedge Parsley*. "Stem prostrate, umbels lateral simple subsessile, fruit sometimes warted." —*Br. Fl.* p. 180. *Caucalis*, *E. B.* t. 199. *Jacq. Fl. Aust.* v. 40; *App.* t. 24 (præst.) *Fl. Dan.* xii. t. 1990 (opt.)

In dry waste places, on banks, under walls, by waysides, borders of fields, and amongst corn; pretty frequent, and most so on chalky or gravelly soils. *Fl.* May—July. *Fr.* August—November. ☉.

E. Med. — Banks at Ventnor and Bouchurch, in great plenty. Ditch-bank between Seafeld and Nettlestone. In the lane between Pound farm and Antony's common, near Ryde. Profusely in cornfields and on banks above Sandown bay.

W. Med. — Extremely common in the parish of Freshwater; about Yarmouth, Thorley, &c. Abundantly on a fence-bank near the Albion hotel. Freshwater gate.

Root long, whitish, slender and tapering, but little branched or fibrous. *Stem* one or many, sometimes caespitose, diffuse, spreading, ascending, decumbent or prostrate, the upper part in the larger plants erect or reclining, from a few inches to 1 or 2 feet in length, simple or spreading, distantly and dichotomously branched, more or less flexuose, round, solid, striate, wiry, rough with scattered, rigid, nearly appressed hairs pointing downwards. *Leaves* sub-bipinnate; *leaflets* gray-green, mostly 2 or 3 pairs, remote, ovate or ovate-lanceolate, pointed, deeply pinnatifid, the segments narrow-lanceolate, entire or cleft, very acute, pointing forwards, hispid on both sides with white subappressed setæ. *Umbels* lateral and terminal, simple, very small, not half an inch wide, opposite the base of the leaves, nearly sessile when in flower, their thick peduncles a very little lengthened out in fruit, 2- or 3-rayed, the rays so extremely short, thick and unequal as to be made evident with difficulty, giving to the entire umbel the aspect of a knot or bunch, of an irregularly roundish figure, and somewhat convex or hemispherical in fruit. *Involucral bracts* several, linear, subulate or setaceous, of very unequal length, as long or longer than the fruit or shorter, setose or hispid like the rays and peduncles, with white scarious margins. *Flowers* all perfect, extremely minute, not larger than a moderately sized pin's-head, closely aggregated and sessile on the rays and in the forking between them. *Petals* white, equal, roundish ovate, with strongly inflexed or involute but not acuminate points. *Anthers* very large, white or purplish; *pollen* white. *Styles* erect, conical, extremely short, thick and blunt, colourless and pellucid, not elongated and reflexed in fruit. *Syndicarps* of a whitish brown or gray colour, forming small, roundish or subhemispherical, dense clusters, broadly ovoid, much contracted and with a deep furrow at the commissure, crowned with the very minute and still erect styles; *hemicarps* not much more than a line in length, the exterior ones of the outermost fruit armed with several rows (apparently 6—8) of straight, spreading, scabrous prickles, the interior or lateral series of which are marginal and pointing backwards, simple or somewhat glochidiate, with a single, spreading or deflexed, very minute point; these prickles are about equal in length to the greatest transverse diameter of the hemicarp, and the interstices betwixt the rows and face of the commissure show a very few erect or appressed spinules: inner hemicarp (and usually both of those belonging to the exterior fruit of the umbellules) thickly granulato-muricate, with very rough crystalline or scabrous papillæ in lieu of prickles, interspersed here and there with a few white spines or bristles; these tuberculated hemicarps are marked with 3 equidistant distinct furrows, formed by interruptions of the tubercles (probably the *vittæ*), along the course of which are several erect or subappressed bristles or setæ. *Carpophore* bipartite, separating only for a short distance from the summit.

The plant has the weak aromatic smell of others of the genus. I have never met with the variety having the exterior hemicarps of *all* the fruit aculeated. Our form is, according to Cosson and Germain, that most frequent in the environs of Paris.

*** *Syndicarpa* smooth, more or less attenuated upwards or beaked.

† *Beak* much attenuated, several times longer than the seeds.

XXV. SCANDIX, Linn.

"Fruit laterally compressed, with a long beak. *Carpels* with 5 obtuse ribs and no *vittæ*. *Calyx-teeth* obsolete. *Petals* obovate, with an inflected point. (Universal involucre wanting, or of 1 leaf; partial one of 5—7 leaves)." — *Br. Fl.*

1. *S. Pecten*, L. *Venus' Comb*. *Shepherd's Needle*. *Needle Chervil*. *Vect. Crow Needles*. "Beak 3—4 times longer than the roughish fruit dorsally compressed ciliated with bristles, leaflets cut into many linear or lanceolate short segments." — *Br. Fl.* p. 176. *E. B.* t. 1397.

Abundant in cultivated land, amongst corn, turnips and other crops. *Fl.* May—October. ☉.

A pale green, bushy, slightly aromatic herb. *Root* whitish, tapering, with several stout simple fibres. *Stems* 1 or more, about a foot high, erect or ascending, branched, round, solid, striated, often purplish below, clothed with short spreading hairs. *Leaves* light green, oblong, the lower ones on long channelled *petioles*, with sheathing bases, which are membranous at the margin and downy, the upper sessile on their still more inflated and downy sheaths, subtripinnate, the lowermost pair of primary *pinnae* remote, the secondary *pinnae* often alternate, bi- or tri-pinnato-pinnatifid, the segments linear-acute, mucronulate and spinulose on the margins and midrib underneath. *Umbels* terminal and opposite, small, 1—3, rarely 4-rayed, when with more than 2 rays generally subtended by a leaf. *Flowers* small, white, some of them wanting styles, and consequently abortive. *Petals* unequal, the exterior ones largest, obovate, with inflexed points. *Styles* persistent, simple, erect, cylindrical and contiguous, on the flat, thick, 2-lobed *stylapode*. *Syndicarpa* spreading or suberect, nearly sessile, dull reddish brown when ripe, elliptical-oblong, 4 or 5 times shorter than their straight, tapering, dorsally compressed beak, which is from about $1\frac{1}{2}$ to $2\frac{1}{2}$ inches in length, beset along the sides or edges with close, erect, simple spines, and crowned with the straight upright styles; *hemicarpa* laterally compressed, a little diverging at their base, which is rounded and tipped with a shining gland or callosity, hence the entire fruit appears as though pendulous or suspended on the carpophore, not standing on the pedicel; *primary ridges* scarcely prominent, equal, uncoloured, the lateral pair marginal, with spinulose edges; *secondary ridges* obsolete, interstices blackish brown, furrowed, and as well as the primary ridges rough with callous points; *vittæ* obscure or obsolete; *albumen* furrowed in front. *Carpophore* entire, filiform.

†† *Beak* shorter than the seeds.

XXVI. CHÆROPHYLLUM, Linn. Chervil.

"Fruit laterally compressed or constricted, with a very short beak. *Carpels* with 5 obtuse ribs, with a deep furrow on the inner face of the carpels. *Interstices* with single *vittæ*. *Calyx-teeth* obsolete. *Petals* obcordate, with an inflected point. (Partial involucre of many leaves)." — *Br. Fl.*

1. *C. temulentum*, L. *Rough Chervil*. "Fruit glabrous with

obtuse ribs, stem rough (spotted) swelling below each joint, leaflets ovate-oblong cut, partial involucre reflexed." — *Br. Fl.* p. 177. *E. B.* t. 1521.

In woods, hedges and waste places; very common. *Fl.* June—July. ♂.*

[**** *Syndicarp* bristly, beaked.]

XXVII. ANTHRISCUS, Pers. Beaked Parsley.

"Fruit constricted at the suture, with a short beak. *Carpels* without ribs or *vittæ*. *Calyx-teeth* obsolete. *Petals* obcordate. (Partial involucre of many leaves)." — *Br. Fl.*

1. *A. sylvestris*, Koch. *Wild Chervil. Cow Parsley.* "Umbels terminal stalked, stem hairy at the base glabrous upwards, a little swelling below each joint." — *Br. Fl.* p. 176. *Chærophylum*, L.: *E. B.* t. 752. *Jacq. Fl. Aust.* ii. 31, t. 149.

In moist shady grassy places, meadows, orchards, groves, on damp hedgebanks, borders of fields, &c.; everywhere. *Fl.* April—June. *Fr.* June, July. ♀.

This plant is a favourite green-meat for rabbits, and is collected for that purpose in the spring.

2. *A. vulgaris*, Pers. *Common Beaked Parsley.* "Umbels stalked opposite the leaves, stem glabrous, leaves ternately decomposed, the segments obtuse, fruit ovately conical hispid about twice as long as the glabrous beak." — *Br. Fl.* p. 177. *Scandix Anthriscus*, *E. B.* xii. t. 818. *Curt. Fl. Lond.* i. fasc. 1, t. 19. *Jacq. Fl. Aust.* ii. t. 154.

On hedgebanks, amongst bushes, by waysides, and in waste places, under walls, &c., mostly about towns and villages, but far from common in the island. *Fl.* May, June. *Fr.* June. ☉.

E. Med.—On the Dover, Ryde; on the low sandy bank near its W. end, rather sparingly,† *Dr. Bell-Salter !!!* On a ditch-bank between Springfield and Nettlestone, in very small quantity, 1846. Rather abundantly on the summit of the cliff between Whitwell Shoot and Niton, in several places. Profusely on hedgebanks along the old or upper road between Ventnor and Bonchurch, also abundant in several places in that neighbourhood. Along the cliff E. of Ventnor, towards Bonchurch, *Rev. G. E. Smith.*

W. Med.—Abundantly on sandy banks and hedgerows at Sand Bank and Sandy Way, Shorwell. Freshwater down.

Whole plant of a delicate pale green, especially in the leaves, by which it is at once distinguishable from all our other species of this natural order. *Root* long, whitish, tapering, more or less branched and comosely fibrous, with a warm pungent smell. *Stem* solitary or in the larger plants several, erect or ascending, from 1 to 3 feet in height, often much branched, terete, slightly furrowed, hollow, succulent and fragile, a little tumid at the joints, often tinged or streaked with purple at the base, glabrous. *Leaves* triangular in circumscription, remotely tripinnate, the tertiary divisions or ultimate leaflets small, contiguous, ovate or oblong, deeply lobato-pinnatifid, with ovate, blunt, apiculate, incised segments, smooth above, fringed and hispid underneath with long, white, simple, setose hairs, extending over the partial and common petioles; of a remarkably tender light green, still paler beneath, soft and flaccid, soon collapsing when gathered. *Peti-*

* Pronounced biennial by Curtis, Host, Wahlenberg, Gaudin, Koch.

† [This station is now (1854) built over, *Edrs.*]

oles hollow, terete, flattish and slightly grooved above, of the radical and lower stem-leaves mostly very long, of the upper gradually shorter, all clasping by their broad but not inflated ribbed bases, which are membranously edged and bordered with close woolly hairs, or lanuginose. *Umbels* small, from about 1 to 2 inches in diameter, solitary, terminal and lateral or opposite to the leaves, on slender, straight, spreading, glabrous peduncles, sometimes sessile or nearly so, few- (from about 3- to 6- or 7-) rayed, the rays about as long as or longer than the peduncle, rather unequal, filiform, glabrous; *umbellets* widely remote, quite simple, 3—6 rayed, the rays (pedicels) scarcely exceeding the ripe fruit in length. *General involucrel bracts* mostly wanting or of a single leaf, *partial ones* about as many as the pedicels, unequal, lanceolate or ovate, fringed, with long slender points. *Flowers* all perfect, very small and inconspicuous. *Petals* extremely minute, equal, widely spreading, white or sometimes pinkish? obcordate, with an inflexed simple point. *Stamens* shorter than the petals, spreading; *anthers* greenish, finally brownish or reddish. *Styles* nearly obsolete; *stylopodes* broad, depressed. *Ovaria* setosohispid. *Syndicarps* small, about $1\frac{1}{2}$ line in length, including the beak, dull brown or blackish, ovoido-conical; *hemicarps* "semiovoid," their inner face contracted, with a deep furrow down the centre, rounded at the back, which is covered in no regular order with grayish bristles curved upwards, having simple toothed tips; tapering into the paler, smooth, furrowed and angular beak (persistent stylopode), which is about $\frac{1}{2}$ the length of the entire fruit, and crowned with the remains of the style.

The whole herb has a pungent, aromatic and sweetish smell, like Parsley or Chervil, and might perhaps, if cultivated, supply the place of both, were not its duration too brief to be available beyond the earlier months of summer.

Order XXXVI. ARALIACEÆ, *Juss.*

"*Calyx-tube* adnate in whole or in part with the *ovary*, entire or cleft. *Petals* 4—10, rarely cohering, or none; æstivation valvular. *Stamens* equal in number to the petals or twice as many, from the margin of an epigynous disk. *Ovary* 2- or more celled: *ovules* solitary, pendulous. *Styles* as many as cells. *Stigmas* simple. *Fruit* fleshy or dry, of several 1-seeded cells. *Seed* with a fleshy *albumen*, and a minute *embryo*. — Trees, shrubs, or herbs; *nearly allied to Umbelliferæ*."—*Br. Fl.*

I. HEDERA,* *Linn.* Ivy.

"*Calyx* of 5 teeth. *Petals* 5, distinct, broadest at the base. *Stamens* 5—10. *Style* simple, or 5—0 more or less combined. *Berry* with 3—10 *seeds*, crowned by the *calyx*." — *Br. Fl.*

The umbellate inflorescence, which in the preceding natural order is often globular as in our Ivy; the fleshy depressed disk (stylopodium) on the germen; the insertion of the stamens; the short conical style, cleft in some species of *Hedera*; the almost imperceptible stigma; pinnate calyx and resinous aroma; are points betraying a closer affinity in this genus to the order just mentioned, than is evinced by most others of its own, of which it was made the type by Linnæus. Sir James Smith, I know not why, considers the berry of *Hedera* as one-celled; to me it appears as truly plurilocular as in any genus whatever, discovering on a

* Derivation doubtful; it has been thought from *hedra*, a cord in Celtic, which the twisted and clasping stems of our Ivy much resemble.

transverse section before maturity 5, or by partial abortion 3 cells, their parietes membranous and double.

1. *H. Helix*, L. *Common Ivy*. Leaves angulato-cordate 3—5 lobed, those of the flowering shoots ovate-acuminate, umbels erect. *Sm. E. Fl.* i. p. 335. *Br. Fl.* p. 181. *Lindl. Syn.* p. 133. *E. B.* xviii. t. 1267. *Curt. Fl. Lond.* fasc. i. t. 16. *Loud. Arbor. Brit.*

On old walls, rocks and trees, in woods, thickets, and on hedgebanks; everywhere most abundantly. *Fl.* October, November. *Fr.* April. $\frac{1}{2}$.

A resinous evergreen shrub, with a stout tortuous stem, ramifying over walls, rocks* and trees, often to a vast extent, and adhering strongly to these objects by numerous rooting fibres emitted from the bark, or creeping along the ground in woods and on hedgebanks without flowering, whence it was called by the older authors "barren Ivy," and by them esteemed a different species (see Gerarde "of Juy" and "the kindes.") In this state the leaves are deeply cleft into 3 acute lobes, of a dark green veined with white. In the more luxuriant shape, under which we see it on the "ivy-mantled tower," the stems constitute large bushy heads of many ascending self-supported branches, flowering copiously at their extremities. *Leaves* scattered, various in form and in the length of their smooth petioles, broadly 3- or 5-lobed, often deltoid like those of the Black Poplar, sometimes obscurely angular and heart-shaped, of a rich shining green more or less veined with white, most so on the extreme and smaller and creeping ramifications, which are similar to the barren variety just mentioned: the change from the lobed to the simple leaf becomes gradually more marked towards the termination of the branches in the flowering shoots, when they are all more or less ovate and quite entire. *Stipules* none. *Flowers* in spherical heads or umbels, that are either solitary or disposed in a corymbose panicle, pale yellowish green, on downy pedicels that have each a minute brownish bractea at the base. *Sepals* very minute, brownish, acute. *Petals* inserted at the base of the germen, very broad at their origin, with a prominent central rib, strongly deflexed after full expansion. *Stamens* inserted between the petals, widely spreading after discharging the pollen; *anthers* yellow or partly purple, 2-celled, bursting laterally. *Germen* very broad, depressed, lobed or furrowed: *style* extremely short, conical; *stigma* very minute, obtuse. *Ovarium* half-inferior, the ovules partly below the plane of insertion of the petals. *Berries* black, the size of peas, obscurely quadrangular, crowned with the perigynous disk, persistent style and minute calyx, 5-celled. *Seeds* 3—5 (rarely more, *Sm.*), oblong, plano-convex, vertical; *albumen* large, in many vermicular folds.

The glandular disk on the ovarium secretes a copious saccharine fluid, that crystallises as a mealy efflorescence on its surface, and is probably a sugar *sui generis*, less sweet than common sugar, but extremely soluble in water. Attracted by this exudation, we may still perceive, in the faint beams of a November moon, a few enfeebled insects, languishing rather than reposing on these honied blossoms, now the instrument of their destruction, from which they are unable to escape. The mealy berries continue to grow through the winter, are ripe in April or May, and are eaten by birds.

The Ivy has been introduced into America as an ornamental creeper for covering the walls of houses, where I have seen it as far North as Boston. It thrives well in the city of Philadelphia, but should be planted in that county only in a North exposure, being liable in a southern aspect to have the shoots cut off by the spring frosts at night, alternating with strong sun during the day, and this, Professor Gray informs me, even as far South as Georgia.

As a decorative evergreen, its heavy black foliage harmonises only with the old

* Most profusely and luxuriantly clothing the precipitous faces of the rocks along the Undercliff, and at East end, where stems may be seen of a great age and size.

English or painted style of architecture; the castellated and Elizabethan mansion, and the Gothic church-tower of even the eighteenth century, look venerable in a mantle of Ivy, almost as the fabrics of the real olden time. The rock and the ruin, vestiges and relics alike of by-gone times, claim the Ivy indeed as their peculiar covering; with its hard stiff leaves and rugged stems, like cords of iron, it seems as if coeval with and enduring as themselves.

The variety called Irish Ivy has a lighter and more cheerful effect than the common form, and is better adapted for concealing bare brick walls and other unsightly objects, by the greater breadth of its leaves. In this country we sometimes see houses completely embowered in Ivy, which is said to keep the walls dry. To myself, I own this plant has something gloomy and repulsive when clinging artificially to habitable buildings, though beautiful and appropriate as the spontaneous vestiture of the ruined wall, craggy steep or hollow tree. To live like an owl in an Ivy-bush is a way of passing existence I should beg to decline sharing with those respectable birds, or with the admirers of the sort of domicile they are said to prefer to all others.

II. ADOXA, Linn. Moschatell.

"*Calyx* half-inferior, 3-cleft. *Corolla* superior, rotate, 4—5 cleft. *Stamens* 8—10, inserted by pairs, each bearing a 1-celled *anther*. *Berry* 4—5 seeded. (The side flowers have the corolla 5-cleft, the terminal one 4-cleft)."—*Br. Fl.*

1. *A. Moschatellina*, L. *Tuberous-rooted Moschatell*. *Sm. E. Fl.* ii. p. 242. *Br. Fl.* p. 181. *E. B.* vii. t. 453. *Curt. Fl. Lond.* i. fasc. 2, t. 26.

In moist shady places, woods, groves, on hedgebanks, and about the roots of trees; very frequent. *Fl.* March—May. 2f.

A smooth, succulent, fragile plant, from 4 to 6 inches high, of a tender lucid green colour. *Rhizoma* creeping, of a few white, fleshy, swollen scales, and emitting from between them several slender often somewhat downy fibres, and from the crown a solitary fleshy runner. *Radical leaves** 1—3, on long, weak, channelled footstalks, biternate; *leaflets* roundish, 3-lobed, the lobes cut, ovate and obtuse, obscurely veined, bright green, smooth and shining as if varnished beneath, each lobe tipped with a minute point or mucro. *Scapes* one or two, taller than the leaves, angular, furrowed, each bearing a little above its middle a pair of opposite simply ternate leaves, on petioles broadly dilated or winged at the base, almost connate. *Flowers* 5, in a close, solitary, terminal head, of a cubic form, pale green, sessile, the 4 lateral ones vertical, mostly 5-cleft and decandrous, the terminal one horizontal, 4- (rarely 5-) cleft and octandrous. *Calyx* half-inferior, much shorter than the corolla, in the lateral flowers of 3, in the terminal of 2 ovate blunt segments; in this last there is occasionally a rudimentary third lobe, and the segments are sometimes minutely pointed. *Corolla* rotate, in 4 or 5 (rarely in 3) roundish entire segments. *Stamens* in the lateral flowers usually 10, in the terminal one 8, standing in pairs on a glandular ring towards the base of the corolla, having the divisions of the segments opposite to or pointing between each pair; *filaments* very short, erect, and bearing a pale yellow, oval, incumbent, single-celled anther, which bursts along its entire length by a longitudinal furrow: occasionally one or more 2-celled anthers may be seen, borne on a single filament, —a fact which strengthens the view taken by Sir W. Hooker, that the stamens

* In a withy-bed adjoining Bridge-Court farm I found, May, 1845, abundance of *Adoxa* having leaves of an unusually dark and dull green colour, somewhat glaucous and marbled with whitish veins; altogether looking so like the leaves of *Thalictrum flavum*, as at first to deceive me into the belief that I had discovered a second locality for that plant, so excessively rare in this island.

may be looked upon as naturally 4 or 5, having their filaments forked, each fork terminating in the single cell of an anther. *Styles* as many as the segments of the corolla, erect, united below; *stigmas* simple, greenish. *Berry* globose, obscurely lobed, pale green and shining, very juicy, half enclosed by the enlarged, fleshy, adnate calyx, and crowned with the styles, 4- (sometimes, it is said, 5-) celled.* *Seed* one in each cell, ovate, whitish and flattened, with a thin narrow border, pendant at the summit of the cell from the very thick medial placenta, and covered with gelatinous pulp.

The herbage of *Adoxa* has a perceptible musky scent in moist weather, or when wetted with dew or rain; that of the flowers is less transient, more penetrating, with some pungency, reminding one a little of nitric acid. Notwithstanding the rule laid down by Linnæus, that the central or terminal flower gives the class and order when differing in the number of its parts of fructification from the rest of the inflorescence, the lateral flowers of *Adoxa* being the most numerous and usually decandrous, this plant should be referred to the tenth class in the artificial system, for which alteration, if natural affinity be allowed any weight in such arrangement (as I think it ought whenever practicable, and not in palpable violation of the Linnæan fundamental principle of numbers), its relationship to *Chrysosplenium* and *Saxifraga* would be an additional sanction. The description of the fruit, which is not commonly produced, was drawn up from fine specimens gathered at St. John's, by Ryde.

Order XXXVII. CORNACEÆ, DeCand.

"*Calyx-tube* adnate with the ovary; *limb* 4—5 toothed and minute, or 4—5 lobed and valvate in æstivation. *Petals* 4, broad at the base; *æstivation* valvular. *Stamens* 4, inserted with the petals. *Style* filiform. *Stigma* simple. *Ovary* 2-celled; *ovules* solitary, pendulous. *Drupe* with a 1—2 celled nucleus. *Seeds* with a fleshy *albumen*, and an *embryo* nearly its length.—Trees or shrubs, rarely herbs. Leaves (*except in one species*) *opposite*, and as well as the fruit beset with *appressed hairs attached by the middle*."—*Br. Fl.*

I. CORNUS, Linn. Cornel. Dogwood.

"*Calyx* of 4 teeth. *Petals* 4, superior. *Stamens* 4. *Nut* of the drupe with 2 cells and 2 seeds."—*Br. Fl.*

1. *C. sanguinea*, L. Wild Cornel-tree. Dogwood. Dogberry-bush. Arboreous, branches straight erect, leaves opposite ovate or roundish ovate green on both sides downy beneath mucronate acuminate about 9-nerved, cymes small flattish without an involucre, drupes globose (black). *Sm. E. Fl.* i. 221. *Br. Fl.* p. 182. *Bab. Man.* 139. *E. B.* iv. t. 249. *Loud. Arb. Br.* ii. 1011, fig. 761. *Guimp. und Hayne, Deutsch. Holtz.* i. 12, t. 3.

* Sir James Smith, who appears never to have seen the fruit of *Adoxa*, describes it, with Gärtner, whose figures are but indifferent, as one-celled. Other authors consider it very justly as 4-celled, the 4 angles of the placenta being very evidently prolonged into complete though very narrow dissepiments. The square mass occupying the centre, and to the top of which the seeds are attached, is quite distinct from their pulpy envelope, and as much entitled to be called a placenta as in any dry or capsular fruit whatever.

In woods, thickets, hedges and bushy places; abundant throughout the island. Fl. June. Fr. September. $\frac{1}{2}$.

A slender shrub, from 4 to 8 or 10 feet in height, sometimes a small tree, the trunk and older branches covered with a light gray streaked or mottled bark, the younger leafy shoots round, straight, erect, dark blood-red in autumn and winter, a little downy towards their extremities. *Leaves* opposite, on short channelled petioles, ovate or roundish ovate, a few occasionally broadly elliptical or nearly orbicular, 2 or 3 inches long, with 9 or 11 depressed converging ribs (the basal pair short and obscurely marked), waved and quite entire on the margin, briefly mucronato-acuminate, their points deflexed; bright green above, sometimes edged with purplish brown, somewhat paler beneath, but downy with fine, scattered, erect hairs; roughish on their upper surface with very minute close-pressed pubescence, scarcely visible without a glass, each hair attached by its centre and bicuspidate, the points spreading flat in opposite directions: these centrally affixed hairs, common, it is said, to the whole genus and several others,* occur, though much more sparingly, on the under side of the leaf, mixed with the erect ones, as well as on the fruit and at the back of the petals. *Cymes* terminal, solitary, stalked, flattish or a little convex, $1\frac{1}{2}$ or 2 inches in diameter, without an involucre, their branches erect and slightly hairy. *Flowers* white, disagreeably scented, especially when just beginning to go off. *Calyx* very minute. *Petals* subelliptic-lanceolate, scarcely narrowing at the base, their tips slightly incurved. *Stamens* long, nearly erect, with pale buff-yellow oblong anthers. *Style* erect, as long as the stamens, suddenly enlarged into a globular form at top, bearing the small, sessile, nectariferous stigma. *Drupe*s globose, the size of small peas, black and hoary, or as it were powdered with medifixed hairs, perforated at the summit where the style was inserted. *Seed* (nut) large, very hard, depresso-globose, 2-celled, with white tasteless kernels.

The white blossoms of the Dogwood are very conspicuous in our hedges throughout the month of June, and whilst its blood-red twigs relieve the monotonous colouring of the winter landscape, the deep purple brown of the fading leaves adds to the rich tinting of our autumnal scenery. The berries, which ripen in September, have a bitter nauseous taste and a greenish pulp, said to yield by expression an oil fit for burning in lamps. The only other shrubby European species, *C. mascula*, has red eatable fruit, now neglected, but formerly known in our gardens as Cornelian Cherries, and still cultivated with us occasionally, for ornament.

The cymes and leaves are often so covered with a white parasite as to look as if dusted over with lime.

* Torrey and Gray, Fl. of N. Amer. i. p. 649.

Subdivision III. COROLLIFLORÆ, DC.

"Petals united, bearing the stamens."—*Bab. Man.*

Order XXXVIII. LORANTHACEÆ, Juss.

"*Stamens* and *pistils* often separated. *Calyx-tube* adnate with the *ovary*, bracteated at the base; its *limb* entire or lobed. *Corolla* of 4—8 *petals*, or monopetalous, with a valvate æstivation. *Stamens* as many as divisions of the *corolla* and opposite to them. *Ovary* 1-celled; *ovule* solitary, pendulous. *Style* 1 or none. *Stigma* simple. *Fruit* inferior, succulent. *Albumen* fleshy.—*Parasitical*, mostly *tropical shrubs*. *Leaves* entire, generally opposite, thick and fleshy, without stipules. The seed sometimes contains 2 or even 3 embryos."—*Br. Fl.*

I. VISCUM, Linn. Mistletoe.

"*Barren flowers*:—*Calyx* obsolete. *Petals* 4, ovate, fleshy, united at the base and bearing each a single anther adnate with the upper surface. *Fertile flowers*:—*Calyx* an obscure margin, superior. *Petals* 4, erect, ovate, very minute. *Stigma* sessile."—*Br. Fl.*

1. *V. album*, L. *Common Mistletoe*. "Leaves obovate lanceolate obtuse, obscurely 3—7 nerved, branches dichotomous or verticillate, heads of flowers in the axils of an upper pair of leaves."—*Br. Fl.* p. 183. *E. B. t.* 1470.

Parasitic on various kinds of trees in woods and orchards; extremely rare in this island. *Fl.* March—May, *Hook.*; December—April, *Leighton*. $\frac{1}{2}$.

E. Med.—Gathered 8 or 10 years ago by *Mrs. T. Harington* in a wood very near Apse farm, as I was assured by herself, 1841. A solitary specimen on an apple-tree in the kitchen-garden of Osborne House, and said to be of spontaneous growth, 1844, *Mr. Thomas Meahan, jun.*

W. Med.—Calbourne, *Mr. Taylor*. Introduced into the garden of George Kirkpatrick, Esq., of Mount Pleasant, Newport.

A small evergreen shrub, about 2 feet high, with many round, pliable yet brittle, repeatedly dichotomous and partly depending branches, covered with a yellowish or blackish green smooth bark, and jointed at the bifurcations. *Leaves* $1\frac{1}{2}$ —2 inches long, terminating the uppermost forks, usually in pairs (occasionally 3 together, as in my specimens, in which case the central flower is 6-cleft and hexandrous), opposite, sessile, obovato-lanceolate, mostly curved upwards, deep shining green, thick, coriaceous, quite entire, with several (about 5) obscure, parallel, branching ribs, and bearing on the upper side of their tapering base an erect, fleshy, concave scale. *Flowers* in small sessile heads, of 3—5 together, in the axils of each pair of leaves and in the upper forks of the branches, yellowish or greenish; *barren flowers* seated on a 2-lobed fleshy receptacle, the lobes serving as bracts to the outermost flowers. *Perianth* usually in 4 (sometimes in 5, 6, or even 8, *Leighton*), ovate, erect, fleshy segments, almost covered within by the adnate sessile anther, whose surface is a network of angular cells, filled with a

pale yellow pollen made up of cohering globules; *fertile flowers* in solitary clusters of three in my specimens (Mr. Leighton describes his as in 4-clustered whorls), on a receptacle similar in form to that on which the staminate flowers are placed, but much enlarged and swollen at the base, the lobes slightly fringed. *Calyx* a thickened rim nearly covering the germen, and becoming a berry. *Corolla* of 4 (sometimes 3) triangular erect petals, broadest at the base. *Germen* adnate with the calyx; *ovule* solitary, erect. *Style* none; *stigma* square, brownish. *Berries* globular, pellucidly veined, not unlike white currants in size and general appearance, but more opaque, slightly marked with the scar of the four petals and stigma, and filled with a very viscid pulp enveloping a solitary, erect, flattened, green seed. *Embryo* 1, 2, or 3 in the centre of the green fleshy albumen, the radical superior.

Mr. Leighton justly observes that the male plant is of a paler yellowish green, with shorter and less rigid branches than the female, whose leaves are usually broader and longer, and the whole plant firmer and more luxuriant.

Order XXXIX. CAPRIFOLIACEÆ, Juss.

"*Calyx-tube* adnate with the *ovary*, usually bracteated at the base. *Corolla* regular or irregular; the segments imbricated in æstivation. *Stamens* 4—5, alternate with the lobes of the corolla. *Stigmas* 3, nearly sessile or subcapitate at the extremity of a filiform *style*. *Ovary* 3—5 celled. *Fruit* generally a *berry* 1- or many-celled, 1- or many-seeded, crowned with the persistent lobes of the calyx. *Albumen* fleshy.—Shrubs or herbs, with opposite leaves; no stipules."—*Br. Fl.*

I. SAMBUCUS, Linn. Elder.

"*Calyx-limb* 5-cleft. *Corolla* rotate, 5-lobed. *Stamens* 5. *Stigmas* 3, sessile. *Berry* 3- or 4-seeded. (Leaves pinnated)."—*Br. Fl.*

A genus of hardy shrubs or small trees, rarely herbaceous plants, closely allied to *Viburnum*, but with pinnated foliage. The species, which are not numerous, inhabit the colder parts of both hemispheres, and are rather ornamental.

1. *S. nigra*, L. *Common Elder*. Arborescent, stipules obsolete, cymes flat compact with 5 principal branches, leaflets 5—7 ovate-lanceolate serrate, stipules obsolete. *Sm. E. Fl.* ii. p. 109. *Br. Fl.* p. 184. *Lind. Syn.* p. 132. *E. B.* vii. t. 476. *Loud. Arbor. Brit.* *Guimp. und Hayne, Abbild der Deutsch. Holtzart.* i. 44, t. 34.

β. Leaflets ternate, orbicular. *S. nigra* ε. *rotundifolia*, DC., *Prod. Pars.* iv. 323.

γ. Fruit pale, nearly colourless.

Very common everywhere in woods, thickets, copses and hedgerows. *Fl.* June, July. *Fr.* August—October. ½.

β. By the roadside between St. Lawrence and Niton, *W. Wilson Saunders, Esq.*

γ. A single tree in a field-hedge below Mouse-hole, Newchurch; noticed there by the occupant of the cottage, named *Russell* !!!

A shrub or small tree, seldom rising in the wild state to more than 20 feet, but in cultivation often attaining to nearly twice that height, much and irregularly

branched, the branches terete or somewhat angular, nearly filled with soft, white, elastic pith. *Stem* 1 or more, erect, when old usually crooked or twisted, covered, as are the larger branches, with a very rough, deeply chapped, brownish or grayish bark, which on the smaller branches is smoother, and beset for the most part with warty points. *Leaves* opposite, imparipinnate, the larger about a span long, their common petioles semiterete, strongly grooved above, roughish with short scattered, bristly hairs, somewhat winged and angled, with a close sheathing epidermis; *leaflets* mostly 2, sometimes 3—7 pairs, with an odd one, of a dull palish, sometimes dark, on very short petiolets, remote, from about 2—4 inches in length, ovate or ovato-lanceolate, sometimes roundish ovate or even orbicular, acute, acuminate or cuspidate, sometimes obtuse, rounded, subcordate or cuneate, equal or oblique and (always?) entire at base, simply, evenly and sharply serrate, the serratures curved forwards; glabrous or slightly setose-pubescent, the lowermost pair occasionally compound, or furnished with a small supplementary leaflet behind. *Stipules* obsolete, or in place thereof a pair of small, erect, subulate processes are sometimes but by no means constantly present, seated at the base of the common petiole and that of the petiolets on their upper sides, like what are observed in *Viburnum Opulus*. *Cymes* on long stalks terminating the young green and succulent shoots, erect, flat or a little depressed, from 4 or 5 to 6, 8, or 10 inches broad, roundish and irregularly lobed in outline, compact or often a little lax and open, the primary divisions or rays usually 5, diverging, subterete and glabrous, the ultimate divisions flat and spreading, all coloured dark red or purple when in fruit. *Flowers* very numerous, crowded. *Calyx* minute, urn-shaped, the limb in 5 (or occasionally 4) unequal, triangular, greenish, spreading segments that are acute, obtuse, rounded or erose. *Corolla* rotate, $2\frac{1}{2}$ or 3 lines in diameter, milk-white with a tinge of green or yellow when newly blown, deeply 5-cleft, the segments ovato-orbicular, entire, more or less convex from the sometimes very strong deflexion of their margins, the tube wholly wanting. *Stamens* about as long as the limb of the corolla, spreading, alternating with the segments; *filaments* white; *anthers* straw-yellow, extrorse. *Styles* 3 sessile greenish glands (*stigmas*) on the short, white and conical ovary. *Berries* round, shining, purplish black, staining the fingers of a rose-red, not blue like those of *S. Ebulus*, nor is the stain nearly so difficult to wash off. *Seeds* brownish white or buff-colour, from about 2 to 3 lines in length, mostly oblong and more or less elliptical or ovate, various in breadth, flattish, slightly pointed at one end, where there is a small chink or cavity containing the *hilum*, copiously, transversely and undulately rugose.

The var. β . is a very singular form,* and which, if not the same, is very similar to a tree I observed, under the name of *S. rotundifolia*, in the College Botanic Garden, Dublin, in 1842. Mr. Borrer has it in cultivation, received from Mr. Forster.

The flowers and leaves of this tree have a scent which is unpleasant to many, and which has much analogy to that of the black currant. It is thought to be narcotic.

Loudon (Arbor. Brit. article *Sambucus*) speaks of the Elder as if not really indigenous to Britain, and only found near houses. That it may be so in the more northern parts of the kingdom I do not pretend to dispute, but in the southern counties and in this island no shrub can be more common in the most sequestered woods than the Elder, where it grows as wild and freely as its frequent associates, the Guelder Rose and Wayfaring-tree.

The common Elder of America (*S. canadensis*, L.) appears to me to differ from the European by no one certain or constant character, though usually recorded as distinct, and considered so still by Dr. Gray, in his recently published 'Flora of the Northern United States.' I have carefully observed each kind in its native region, and compared numerous specimens of both, and can only come to the

* [A shrub of Elder, intermediate between this well-marked variety and the common form, is observed by Dr. Bell-Salter within the precincts of Crisbrooke castle, near the steps leading to the keep.—*Edrs.*]

conclusion, with Michana, that they are essentially one and the same. The American Elder it is true does not usually attain to so great a thickness of stem as the European, nor does it ordinarily rise above a shrub of moderate height, but our own is often seen of as humble a growth; and the smaller diameter of the trunk may proceed from the greater disposition of *S. canadensis* to propagate itself by suckers, whence the nourishment which would else go to feed a single stem is diverted to the supply of several, as we see in *S. nigra* when growing in such low moist places as the other principally affects. The American Elder is thought to be less woody than the European (Gray says "stems scarcely woody"), but I have billets of Elder, which I cut from old trunks in swampy ground at Savannah, the heart-wood of which is as close-grained and firm as in specimens of much greater diameter felled in this island, and in no way distinguishable from the latter. The leaflets in *S. canadensis* are stated to be usually 7 to 11 (I find 7 in my New-York specimens, and from 7 to 9 in those from Georgia), whilst with us the leaflets of *S. nigra* rarely exceed 5 or at most 7, which is sometimes the number in the American variety, as I consider it to be. In the Savannah specimens the leaflets are unusually narrow or quite lanceolate, but on some the transition is obvious to the broader form of the more northern examples from New York. It has been truly observed that in *S. canadensis* the leaflets of the lowermost pair are often compound, either double or ternate, which some of my specimens well show; this I find to hold good in the European tree, though rarely, and therefore, being a purely casual distinction, is wholly inconclusive against the question of identity. Neither in the leaves, flowers, fruit, seed, nor general habit, can I detect any difference whence to frame a specific character that shall distinguish the cis- and trans-Atlantic forms of the Elder from one another on paper, since even the eye fails in finding distinctions which are not at once vain and evanescent.* The difference in stature I have, I think, satisfactorily shown to be explicable by the more stoloniferous habit of the American form, itself a mere climatic attribute, dependent probably on the swampy soil which the hotter summers of that continent make more suitable for a plant belonging to a shade- and water-loving natural order like the present.†

Many other American plants formerly regarded as species have of late been very judiciously referred to European originals, from which they scarcely deviate even as varieties. Some of these are noticed, under *Viburnum*, *Scrophularia*, *Castanea*, &c., in this work.

2. *S. Ebulus*, L. *Dwarf Elder*. *Danewort*. Vect. *Ground Elder*. Stem herbaceous, stipules leafy, filaments much thickened and uneven. *Br. Fl.* p. 184. *E. B. t.* 475. *Curt. Fl. Lond.*

In waste ground, about hedges, ruins, by roadsides, and in pastures, but rarely. *Fl.* July, August. *Fr.* September. 24.

E. Med.—In a field called West close, on Ford farm, near Redhill, *Mr. W. Jolliffe*. Between Luccombe and Bonchurch, *Mr. S. Woods*, Bot. Guide!!! I found a plant or two almost choked with bushes between Chine cottage and Rose cliff. Near Housborn (Osborne?), *Mr. E. Forster, jun.*, Bot. Guide. It grows, as I learn from a labouring man at Newchurch, in plenty in an arable field under Ashy down, a little above Kerne, where it proves extremely troublesome, from its tough creeping roots obstructing the plough in its progress over the soil!!! It also grows, I am informed by the same person, in one or two other spots near Kerne, but more sparingly.

W. Med.—It formerly grew in the orchard of Crook's cottage, at Middleton

* [Mr. Borrer observes that the *Sambucus canadensis* is destitute of the peculiar odour of the English *S. nigra*.—*Edrs.*]

† I was surprised to see a species of *Sambucus*, very nearly allied to our common Elder (*S. canadensis* ?), flourishing and flowering freely in the sultry climate of Barbadoes and Trinidad, where it is cultivated in gardens for medical purposes.

green, but has not been seen there for many years. Near Carisbrooke castle. Between Newport and Carisbrooke castle, *Mr. W. D. Snooke*.

A stout bushy plant, 3 or 4 feet high, looking much like seedling trees of the common Elder. *Root* fleshy and creeping, *Sm.* *Stem* rounded, deeply furrowed, filled with a white pith, oppositely branched. *Leaves* impari-pinnate, with from 4 to 6 pairs of lanceolate acute leaflets, sharply and unequally serrated, deep green, a little hairy beneath, very like those of the last, but usually narrower. *Stipules* leafy, ovate, of one or more pairs of leaflets, various in form, toothed or lobed. *Cyme* terminal, as broad as the hand, of 3—5 principal branches (in my specimens from St. Catherine's uniformly 5, 4 lateral and 1 central), blood-red in fruit. *Flowers* larger than in the common Elder, white tipped with dark rose-red or purple, of a strong peculiar odour, resembling bruised bitter almonds, mixed with something less agreeable, and to many persons very unpleasant, but to others quite the reverse. Segments of the *corolla* with an inflexed point. *Filaments* white, singularly thickened, uneven on their surface; *anthers* purple. *Styles* 3 very short obtuse cones, with a slight depression or furrow on each. *Berries* sparingly produced in general, like those of the common Elder in size and colour, of a bitter mawkish taste, filled with a juice which stains the hands of a deep indigo-blue, and is with difficulty removed by washing. *Seeds* small, angular.

Like its congener, *S. nigra*, the Dwarf Elder seems truly indigenous to the Isle of Wight, the station near Niton being far from any garden or other situation from whence it might have escaped; its more usual habitats are by roadsides at the entrance to villages and towns, as Mr. Gerard Smith remarked to me.

The plant is, I understand, sought after by farriers and horse-doctors as a stimulant and to improve the coats of horses, which may account for its present scarcity in some localities, as between Chine cottage and Rose cliff, where a countryman informed me he had formerly seen it in abundance.

II. VIBURNUM,* *Linn.*

"*Calyx*-limb 5-cleft. *Corolla* campanulate or funnel-shaped, 5-lobed. *Stamens* 5. *Stigmas* 3, sessile. *Berry* inferior, usually 1-seeded."—(*Leaves simple*).—*Br. Fl.*

An extensive genus of hardy ornamental shrubs, chiefly American, of which Europe possesses but three species, one of which is the well-known Laurustinus (*V. Tinus*, *L.*) of our gardens. The leaves of the deciduous kinds turn red or purple in autumn, and the fruit of some is eatable.

1. *V. Opulus*,† *L.* *Guelder Rose*. *Water Elder*. *Vect. Stink-tree*. Leaves 3-lobed rounded or subcordate at base downy beneath, the lobes acuminate coarsely sharply and angularly toothed and serrate, petioles glandular with slender stipuliform appendages, cymes pedunculate flat radiant, fruit globose (red). *Sm. E. Fl.* ii. p. 107. *Br. Fl.* 184. *Bab. Man.* 141. *E. B.* v. t.

* The name *Viburnum* is of doubtful signification, some deriving it from *Viere*, 'to bind with twigs,' 'to wattle,' and for which purpose the tough flexible shoots of our second species are well adapted; but I am inclined to think it a compound word, synonymous with *Viorna*, applied by the ancients, it is supposed, to some kind of *Clematis*, quasi vias ornans, both plants possessing the qualities of flexibility, and of ornamenting the highways by which they grow. The coincidence between the French *Viorne* and the English *Wayfaring-tree*, to designate the same shrub, hints at a common origin for the two Latin names, almost conclusive of the truth of this etymology.

† *Opulus* (*Opier*, *Fr.*), perhaps from *Opulentus*, on account of its fine appearance when in flower.

332. *Loud. Arb. Brit.* ii. 1039. *Guimp. und Hayne, Abhild der Deutsch. Holtzart.* i. 42, t. 32. *Opulus glandulosus, Mönch.* V. *Oxycoccus.* V. *edule.*

β. Lobes of the leaves very long and acuminate.

γ. Cymes greenish.

In low moist woods, copses, thickets, hedges, and banks of rivers, streams, &c.; very frequent. *Fl.* May, June. *Fr.* September, October. h.

E. Med.—Extremely common about Ryde, as in Quarr copse, Apley woods, &c. Whitefield wood, and in a wood between Roughborough and Rickhouse farms. Abundant in New copse, between Ryde and Wootton. Plentiful in copses by the Medina, above E. Cowes. Tolt copse. Most abundantly in the copse bounding the North side of Ashey common. Frequent in Cothey-Bottom copse, by Westridge. Common in Eagle-head copse. Woods about King's quay. In most copses about Fern hill, Little-town, Briddlesford, &c.

W. Med.—Elm copse, near Calbourne, abundant. In moist places about Westover, and elsewhere near Calbourne, frequent. Symington copse, near Medham. Nunnswood or Nunningswood copse. In the wet thicket by the stream between Newbridge and Calbourne mill, abundantly.

β. Copse near Hardhill farm, W. Cowes.

γ. A tree or two at the N. end of Whitefield wood. In Elm copse, several bushes.

A shrub, rarely, except in gardens, a small tree, from 3 or 4 to 6 or 10 feet high, rising with one or more slender stems seldom above a finger thick, with rather few, opposite, straight, angular and flexible branches, filled with pith and having a smooth grayish bark, which on the trunk is a little rough and furrowed. *Leaves* opposite, stalked, bright green and glabrous above, paler and finely downy beneath, various in size, sometimes as broad as the hand, usually from about 3 to 4 inches in length and about as wide as long, but often much smaller, broadly and deeply 3- or often somewhat 5-lobed, when they resemble those of the Sycamore (*Acer Pseudo-platanus*) but smaller, the lobes acuminate, coarsely, acutely and unequally toothed and serrated, the lateral pair diverging, with broad mostly obtuse sinuses; rounded or somewhat cordate and entire at base, near which there is frequently a pair of small shallow lobes, in addition to the three principal ones. *Petioles* an inch long or less, deeply grooved, with one or more pairs of greenish or reddish oblong glands towards their summits, and about as many filiform, stipular, erect appendages in their axils, which seem to be merely the above glandular bodies elongated, and are perhaps rudimentary *leaflets* of an occult pinnated arrangement, as in *Sambucus*, to which this and some other lobed-leaved species of *Viburnum* approach very closely in habit, connecting the two genera.* *Cymes* terminal, pedunculate, 2, 3, or 4 inches broad, flat, of about 7 principal branches, and bearing numerous yellowish white perfect flowers, like those of the Elder, rather unpleasantly scented, surrounded by a circle of large, pure white, abortive blossoms, consisting of an unequally 5-lobed, flat, petaloid disk, with or without rudimentary organs of reproduction. *Corolla* sometimes slightly tinged with red, the limb in 5 roundish somewhat recurved segments, hairy within, the tube very short. *Stamens* much exerted; *anthers* pale. *Styles* conical. *Fruit* in somewhat lax or drooping clusters, the size of red currants, globose or very slightly elliptical, bright clear red, at length purplish and semitransparent, full of a clammy, acid, bitter, and when dead ripe nauseously smelling juice; *nucleus* solitary, orbicular heart-shaped, much flattened, with a ridge down one of its faces.

The variety γ. is distinguished only by having all the florets, including the outer radiant ones, of an herbaceous colour, the petals of the central blossoms small and rather imperfectly developed, those of the marginal ones traversed with white veins and partly suffused with purple, the change more or less complete on

* If this view of the matter be correct, the lobes of the leaves exhibit the uppermost pair of leaflets with the odd or terminal leaflet united.

different cymes, some even on the same bush remaining wholly unaltered. In this state the flowers bear a considerable resemblance to those of some N. American species of *Hydrangea*.

When cultivated, all the central flowers of the cyme, like those of the circumference, lose the organs of fructification, each becoming a flat expansion of the 5-lobed corolla around a minute point, whilst the entire cyme assumes a globular form *. In this state it is familiar to most persons as the Snowball-tree of our gardens and shrubberies, to which it is a great but transitory ornament. The tendency to run into this double or rather sterile condition is so great that it is scarcely possible to preserve it single under cultivation, even when raised from cuttings brought from the woods, such cuttings themselves producing flowers with a partially altered structure. The single wild shrub is scarcely inferior in beauty to the garden variety, though less showy; the broad flat cymes, bordered with a coronet of the purest white, decorate our moist woods in summer, and enliven them in autumn with the bright scarlet of the ripe berries and the vivid purple of the fading leaves. The flowers are greenish on first opening, and the abortive marginal ones expand before the rest. The fruit of two species closely resembling the present, *V. edule* and *V. Oxycoccus*,† is agreeably acid, and used as a substitute for cranberries in N. America. That of the European kind, offensive and nauseous as it is to our more civilized and refined taste, yields an acceptable treat to the natives of a ruder soil. The berries, Pallas tells us, are eaten in Russia either boiled into a paste? (in pastam coctæ) with flour and honey, or baked with the flour of fermented barley into small cakes.‡ Gmelin§ relates a strange story, from Steller, of the property these berries are said to possess of depriving corn-brandy of both taste and smell, and reducing it apparently to so much water, yet retaining its intoxicating power, which is rather increased than diminished by the addition, but the history is too long for insertion in this place.

The American Guelder Rose, as I have gathered it in Canada, differs in no respect from the European shrub, as far as I can discover; and the ripe fruit has precisely the same intense acidity and bitterness. In that country and in the United States many wild berries and fruits are sold in the public markets which we should not deem worth the trouble of gathering. Thus I have seen Acorns, Beechmast, the berries of various species of Thorn, *Viburnum*, &c., exposed on the stalls, with other and more palatable wild fruit, as Hickory and Hazel-nuts, Walnuts, Persimmons, Chestnuts, and many other kinds. A stroll amongst the stalls on a market-day, at Philadelphia in particular, is at the proper season not the least interesting and profitable of the rambles of a travelling naturalist, where he may make large additions to his carpological collection, and gratify his appetite with many carpological novelties not to be despised in the pride of his philosophy.

The N. American *V. acerifolium*, which the author of the 'Arboretum Britannicum' thinks may be a variety of our Guelder Rose, is manifestly distinct, and finds its analogue in the *V. orientale* of Asia, from which it is possibly not really different, but this last I have no knowledge of except from plates and descriptions.

2. *V. Lantana*, L. *Wayfaring-tree*. *Pliant Mealy-tree*. Vect. *Whip-crop*. Leaves roundish ovate or ovato-elliptical plicat rugose simply and evenly denticulate-serrate strongly veined and tomentose beneath, petioles simple eglandulose and as well as the

* A precisely similar change of structure is seen in the common *Hydrangea* (*H. hortensis*, Sm.), so common in the gardens of this island.

† Torrey and Gray reduce the N. American *V. edule* and *V. Oxycoccus* to vars. of our European *V. Opulus*, yet it seems hardly credible that the same species should produce in one country an agreeably flavoured, and in another a nauseously tasting fruit.

‡ Fl. Ross. i. pars 2, p. 31.

§ Fl. Sibir. iii. p. 146.

flowering shoots and branches of the cymes mealy, cymes pedunculate dense convex or hemispherical, flowers all equal and perfect, fruit ovoid (black). *Sm. E. Fl.* p. 107. *Br. Fl.* p. 184. *Bab. Man.* 141. *E. B. v. t.* 331. *Loud. Arb. Br.* ii. 1036, fig. 785. *Jacq. Fl. Aust. Icon.* iv. t. 341. *Guimp. und Hayne, Abbild der Deutsch. Holtzart.* i. 41, t. 31 (optima).

In dry elevated or rocky woods and thickets, on bushy hills, banks, and in hedges, also on old walls; abundant wherever the soil is at all calcareous. *Fl.* May, June. *Fr.* August, September. $\frac{1}{2}$.

E. Med. — Frequent about Ryde, as in Quarr copse, about Ashey down, &c. In great abundance amongst the rocks at East-end, and from thence all along the Undercliff. In elevated woods between Shanklin and Bonchurch. Common in Bembridge Island.

W. Med. — About Newport, Carisbrooke, Gatcombe, Shorwell, Calbourne, Yarmouth, &c., in plenty.

A shrub or small tree, from 4 to 12 feet high or more, rising with several slender stems or a single stout one, usually in the wild state of somewhat straggling growth, at other times of more regular and compact form, when old much and irregularly branched, the branches opposite, tough and pliant, straight, at least in young trees and those from the root-suckers, rounded or near the top very obscurely quadrangular, the lowermost occasionally procumbent at the base and ascending; filled with a white spongy pith, clothed towards the summit and at the extremities of the flowering shoots with dense, grayish, mealy, stellate pubescence intermixed with chaffy scaliness, and covered with a smooth reddish or ash-coloured bark, which on the trunk is rough and brownish. *Leaves* opposite, various in size and shape, sometimes 4 or 5 inches long, mostly from 2 to 3 inches in length and about $1\frac{1}{2}$ or 2 inches wide, firm and thickish, deep yellowish green, russet-coloured when young, ovate, roundish ovate or ovato-elliptical, obtuse or rounded, pointed or slightly acuminate, subcordate and often a little unequal at the base, finely, evenly and simply denticulate-serrate, the serratures mucronate, not incurved; glabrous above or roughish only with a few scattered, very short, stiff, simple or stellate hairs, and often considerably shining, plicato-rugose; beneath paler, with very prominent ribs more or less densely clothed with stellate tomentum extending over the entire surface of the leaf. *Petioles* semiterete, slightly grooved above, but not margined or glandular, about half an inch long, very downy. *Stipules* none. *Cymes* terminal or occasionally in the forks of the uppermost branches, convex or nearly hemispherical, never flat, from 2 or 3 inches to a hand's breadth across, sometimes subtended by a pair of leaves, much compounded, of about 6 stout, principal, horizontal, and one central erect division, densely tomentose with short stellate pubescence, and furnished at the bifurcations with linear-lanceolate, deciduous, woolly bracts, that are occasionally leafy at the apex. *Flowers* numerous, crowded, rather small, white or cream-coloured, in gardens sometimes tinged red externally, somewhat unpleasantly scented, all equal and perfect. *Calyx* minute, greenish, with very obtuse segments. *Corolla* glabrous, deeply 5-cleft, with oblong rounded segments, the tube very short. *Anthers* and their globular *pollen* pale yellow. *Styles* extremely short, nearly obsolete. *Fruit* densely clustered, roundish or ovoid, slightly compressed, 3 or 4 lines in length, at first bright scarlet and shining, bluish black and juicy when quite ripe. *Nucleus* grayish, broadly elliptical, nearly orbicular, much flattened, with mostly 2 longitudinal furrows on one side and 3 on the other.

This shrub is much cultivated in gardens at Ryde; when, as Loudon remarks, in good free soil, it forms a handsome, durable, small tree, 18 or 20 feet in height, commending itself by its large broad leaves and ample hemispheres of white flowers, succeeded by a no less brilliant display in the glowing and polished clusters of its half-ripened fruit. These, when fully mature, have a bitterish sweet taste, not unpleasant, and, though somewhat mawkish and scarcely worth eating,

are very grateful to small birds. The leaves fade into a deep purplish red in autumn.

Pallas informs us that the slender stems are used in Russia for whip-handles, a purpose to which they are sometimes applied in this island, as might be inferred from the vernacular name of Whip-crop.

I have seen the fruit of the black Haw-tree (*V. prunifolium*), which has exactly the flavour of that of *V. Lantana*, exposed for sale in the market at Montreal, under the name of *Alizes*, being plainly confounded with and reputed a kind of Thorn.

Some species of *Viburnum* from Nepal, as *V. cordifolium* and *cotinifolium*, are closely allied to our *Lantana*, as is also the Hobble-bush of N. America, *V. lantanoides*, Michx., which by some has been thought to be a variety of the European Wayfaring-tree. The former is however truly distinct in its partly procumbent habit; far larger, rounder, coarsely and doubly serrated leaves, which are strongly reticulated beneath; in its sessile fewer-flowered cymes, the outer blossoms of which are large, sterile and radiant, like those of *V. Opulus*. A similar relationship exists between this last, the *V. acerifolium* of America, and the *V. orientale* of Asia, showing clearly that the retention of *Opulus*, as a section by DeCandolle or as a genus by Tournefort and others, is wholly unnatural, because some species of *Viburnum*, belonging properly to the section *Lentago* of the former, have radiant cymes, whilst others, with lobed leaves and the habit of the *Opulus* division, are destitute either of abortive flowers, or stipuliform appendages to the petioles, or both.

III. LONICERA, Linn. Honeysuckle.

"*Calyx*-limb small, 5-toothed. *Corolla* tubular or somewhat funnel-shaped; the limb irregular, 5-cleft. *Stamens* 5. *Style* filiform. *Stigma* capitate. *Berry* 1—3 celled, few-seeded."—*Br. Fl.*

1. *L. Periclymenum*, L. *Common Honeysuckle*. *Woodbine*. "Heads stalked, flowers ringent capitate terminal, leaves all distinct deciduous oval."—*Br. Fl.* p. 185. *E. B.* t. 800. *Guimp. und Hayne*, *Abbild der Deutsch.* Holtzart, i. 17, t. 7.

β. Leaves sinuate. *Oak-leaved Honeysuckle*.

In woods, thickets and hedges; abundant.* *Fl.* June—October. *Fr.* August—October. h.

A state with the leaves and stems perfectly glabrous occurs at Bembridge down, banks in Sandown bay, and in hedges between Hardinshoot and Whitefield farms. This condition is perhaps not at all uncommon, but the plant is, I think, far more usually hairy, and with the leaves downy beneath.

β. In a wood by Elm farm, near Calbourne. Wood between Wootton and Whippingham.

* The Honeysuckle nourishes the larva of the beautiful and rather rare butterfly, *Limenitis Camilla*, whose graceful evolutions on the wing I had first the pleasure of observing in Quarr copse, where it is frequent.

Order XL. RUBIACEÆ, *Juss.*

"*Calyx* adherent with the *ovary*, entire or toothed at the margin. *Corolla* regular. *Stamens* inserted upon the corolla and between its divisions. *Style* 1. *Ovary* 1, with 2 or more cells. *Embryo* straight, surrounded by a horny *albumen*. *Radicle* inferior. — Leaves *opposite*, with *interpeticular* stipules or whorled. — A most important natural family. All the species found in Europe belong to the group called *Stellatæ* or *Rubiaceæ* proper, and have, besides the above characters, a 4—5 lobed corolla valvular in æstivation, 4—5 stamens, a bipartite or trifid style, 2 capitate stigmas, a 2-celled 2-seeded pericarp, and slender herbaceous square stems with whorled leaves."—*Br. Fl.*

I. RUBIA, *Linn.* Madder.

"*Corolla* rotate or campanulate or funnel-shaped, 4—5 cleft. *Stamens* 4—5. *Fruit* a 2-lobed berry."—*Br. Fl.*

This genus scarcely differs from *Galium*, except in certain technical characters given above, of which that of having the flowers pentamerous is perhaps the only tolerably natural distinction. The true Madders, as so restricted, are for the most part of larger size and more robust habit than the Bed-straws, with scandent sometimes woody stems, and rigid, prickly, often persistent leaves, that are usually in whorls of 4 or sometimes 5, rarely 6. But certain American species now referred to *Galium* are intermediate betwixt it and *Rubia* in their succulent coloured fruit and tetramerous flowers, as well as in general habit, and hence have been allotted by preceding authors sometimes to the one, sometimes to the other of these genera, as, for instance, the *G. hispidulum* of Michaux (*R. Brownei* of the same author, and *R. Walteri* of DeCandolle), *G. uniflorum* of Mx., &c. These connecting species however form but a small group (*Relburnium* of Endl.), leaning rather to *Rubia* than to *Galium*, and are further distinguished from the true *Galiums* by their involucrate or bracteated peduncles.

1. *R. peregrina*, L. *Wild Madder*. *Vect. Evergreen Oliver*. Leaves mostly 4 in a whorl persistent smooth and shining above margins and midrib beneath prickly, stems scabrous woody below, peduncles paniculately forked, corolla 5-cleft rotate. *Br. Fl.* p. 186. *E. B.* t. 851. *Fl. Ital.* ii. p. 145. *R. sylvestris*, *Brot. Phyt. Lusit.* select. ii. t. 169.

Climbing over bushes or rough rocky ground in woods, thickets and hedges in many parts of both East and West Medina; abundantly. *Fl.* June, July. *Fr.* September? October. 4.

E. Med.—Frequent about Ryde, in Quarr copse, Shore copse, Whitefield wood, and most abundantly in a lane (Church lane, I believe it is called) skirting Quarr copse, between Binstead and the Newport road, and where it produces berries. Along the shores of the harbour between Bembridge and Brading, very plentifully. Profusely all along the Undercliff, and very luxuriant at St. Lawrence, Steephill and Bonchurch. In woods along the coast between Ryde and St. Helens.

W. Med.—In various places along the upper road from Yarmouth to Newport, betwixt Hebbards and Watchingwell farms, in plenty. About Newport and

Cowes, where my friend *Mrs. Goodwin* tells me it is called Evergreen Cliver by the country people. Like a thick matting on the hedges along the road about a mile from Yarmouth towards Shalfleet.

A beautiful evergreen plant. *Root* slender. *Stem* solitary, perennial and woody, terete, chordiform, and according to situation short, reclining and procumbent, or scandent over bushes and trees to the length of several feet,* about the thickness of a quill at base, quite or nearly simple below, leafless, very tough and flexible, covered with an ash-coloured cuticle, which when old peels off in fine paper-like laminæ; alternately branched above, the branches green, acutely quadrangular, with a tough medullary chord in the centre, probably biennial or perishing after having once flowered, certainly more than annual, their very salient angles rough with short cartilaginous points or prickles directed downwards. *Leaves* in whorls of 4, 5, or 6 (commonly 4 or 5), mostly reduced to a pair or 3 beneath and amongst the flowering ends of the branches, sessile, deep green and persistent, the young shoots reddish brown and lucid, extremely firm and rigid, quite glabrous, their slightly deflexed margins and prominent midrib beneath beset with short, curved, cartilaginous prickles pointing downwards and a little backwards, those on the midrib fewer or even wanting: in shape and size the leaves vary infinitely, from lanceolate or elliptic-lanceolate to broadly elliptical, ovato-elliptical, ovate or even obovate, the smaller usually the broadest, rounded or obtuse, with a small mucro, the larger acute or pointed but not acuminate. *Flowers* in axillary and terminal di-trichotomously forked clusters, forming a compound leafy panicle. *Pedicels* unequal, scabrous, divaricate, spreading or deflexed, usually with one or two small lanceolate bracts at their base. *Calyx* obsolete. *Corolla* about $2\frac{1}{2}$ lines in diameter, yellowish green, rotate, without any tube, very deeply 5-cleft (with a 6-cleft flower occasionally interspersed), the segments spreading, a little unequal, ovate or ovato-elliptical, their margins deflexed, abruptly taper-pointed, besprinkled above with pale papillose points or granulations. *Stamens* very short, erect, inserted about midway betwixt the throat of the corolla and the base of its segments; *anthers* innate, pale yellow, of a somewhat rectangular, oblong, square figure, a little decurved or arcuate, plane underneath, convex above; *pollen* yellow. *Styles* 2, short, erect, greenish, subglobose-capitate, surrounded by a tumid ring or border filling the orifice of the corolla. *Ovary* subglobose, compressed. *Fruit* not much larger than a peppercorn, purplish black, smooth and shining, roundish or (when both seeds are perfected) subdidymous. *Seeds* two, or as often only one by abortion, large, subglobose, flattened on the inner side, surrounded with a mealy and juicy nearly tasteless pulp, of a purple colour.

The lower part of the stem partakes of the colouring matter so copious in the root. Might it not be successfully cultivated, and yield as good madder as *R. tinctorum*?

The Madders are less hardy than the Bed-straws, and cease far sooner than these latter towards the North. Our native species ranges to somewhat above 53° in the W. of England, which is doubtless the extreme polar limit of the genus in Europe. Though found sparingly in Kent and Sussex, this island appears to be the most eastern limit of its occurrence in abundance even on the S. coast, becoming more frequent as we advance towards the West. The stems are certainly perennial, not dying after flowering, but emitting fresh shoots, though it is probable they do not survive beyond the third year. The fruit is comparatively but sparingly matured, by far the greater number of the flowers falling away and leaving only the bare pedicels.

* I measured a stem from the Priory woods, near Ryde, which had ascended the trunk of a tree to the extent of ten feet, and, though the intermediate part appeared quite dead and withered, the summit shot out into a bundle of green and vigorous leafy branches.

II. GALIUM, Linn. Bed-straw.

Corolla rotate, 4-cleft. *Stamens* 4. *Fruit* a dry, 2-lobed, indehiscent *pericarp*, without any distinct margin to the calyx.

* *Fruit* glabrous. *Flowers* yellow.

1. *G. cruciatum*, With. *Crosswort*. *Mugweed Bed-straw*. "Leaves 4 in a whorl ovate 3-nerved hairy, flowers polygamous in small axillary corymbs, peduncles 2-leaved." — *Br. Fl.* p. 187. *E. B. t.* 143.

In dry woods, groves and thickets, along sunny hedges, the borders of woods and fields, and on dry banks under walls and rocks; very frequent. *Fl.* April—June. 4.

2. *G. verum*, L. *Yellow Bed-straw*. "Leaves about 8 in a whorl linear with revolute margins grooved above downy beneath, flowers in dense panicles." — *Br. Fl.* p. 187. *E. B. t.* 660.

In dry fields and pastures, by roadsides, on banks, and in loose sand of the seashore; abundantly.* *Fl.* June—September. 4.

** *Fruit* glabrous. *Flowers* white.

3. *G. Mollugo*, L. *Great Hedge Bed-straw*. "Leaves 6—8 in a whorl oblong-lanceolate or obovate mucronate rough at the margin with prickles pointing forward and lower branches of the panicles spreading horizontally, stem flaccid, segments of the corolla taper-pointed, fruit-stalks divaricated.

"*a.* Stem glabrous, leaves oblong-lanceolate, floral ones small. *E. B. t.* 1673." — *Br. Fl.* p. 188.

β. ochroleuca. Flowers yellowish green.

In hedges, the borders of woods and thickets, and in bushy places; abundant throughout the island. *Fl.* June?—August. 4.

β. Between Ventnor and Bonchurch, not uncommonly, *W. Wilson Saunders, Esq.* In a hedge of a common field near Plumbley's (new) hotel, Freshwater gate; confined to one spot, but in considerable plenty, growing with the ordinary white kind, and strikingly contrasted with it. By the footway between Shanklin and Cook's castle.

The copious milk-white flowers of the great Hedge Bed-straw very conspicuously adorn our hedgerows in the latter months of summer.

4. *G. palustre*, L. *White Water Bed-straw*. *Marsh Bed-straw*. "Leaves 4—6 in a whorl oblong-lanceolate obtuse tapering at the base and as well as the lax spreading branched stem more or less rough, panicles diffuse, fruit-stalks divaricated.

"*a.* Stem and leaves smoothish." — *Br. Fl.* p. 188. *G. palustre*, *E. B. t.* 1857.

β. Nerves at the back and margins of the leaves and angles of the stem rough with mostly reflexed prickles. *G. Witheringii*, *Sm.*: *E. B. t.* 2206. *G. montanum*, *With.*

* The larva of the beautiful, scarce, spotted elephant hawk-moth, *Deilephila* (*Sphinx*, L.) *Galii*, feeds on this species, *G. Mollugo*, and probably on *Rubia peregrina*. The insect has been taken in this island.

In moist woods, meadows, ditches, the weedy margins of ponds, rivers and other low, wet, marshy places; extremely common. *Fl.* June, July. 24.

β. Abundant in a wet wood near the western side of Blackpan common. Under a moist hedge near Coppid Hall. Freshwater village and Alum Bay, *Rev. G. E. Smith*.

5. *G. uliginosum*, L. *Rough Marsh Bed-straw*. "Leaves 6—8 in a whorl linear-lanceolate bristle-pointed, their margins and the stem rough with reflexed prickles."—*Br. Fl.* p. 187. *E. B. t.* 1972.

In damp marshy or boggy places like the last, but much less frequent. *Fl.* July, August. 24.

E. Med.—Between Ryde and Ashey common. Willow-thicket near Langbridge, by Newchurch. Wet spot on Briddlesford heath. Plentiful on a moor close to Stone farm. Willow-bed near Budbridge farm, in plenty. Wood near St. John's turnpike, Ryde, *Rev. G. E. Smith*. [Stapler's heath, near Newport, *A. G. More, Esq.*, Edrs.]

W. Med.—Willow-thicket by Bagwick. In the marsh at Freshwater gate. In a bog close to Cockleton farm, near Cowes.

Root slender. Stems a foot or 18 inches high, weak, brittle, quadrangular, the corners very prominent, and rough with short prickles pointing downwards. Leaves in whorls of 6 or 8 (the uppermost with never less than 5), linear-lanceolate, quite glabrous, bright green, armed beneath along their slightly inflexed edges with a single row of prickles pointing downwards and backwards, and tipped with a fine very distinct bristle or mucro. Flowers white, in small 3-forked panicles at the end of the stem and branches; occasionally some of them are 5-cleft, their peduncles and the ultimate divisions of the panicle smooth. Segments of the corolla scarcely pointed. Anthers at first yellow, then brownish, of 2 round lobes. Stigma 2-lobed. Fruit small, minutely granulated or dotted.

The whole plant is more slender than *G. palustre*, and does not, like it, turn black in drying.

6. *G. saxatile*, L. *Smooth Heath Bed-straw*. "Leaves about 6 in a whorl obovate mucronate, stem much branched smooth usually prostrate, panicles corymbose small, pedicels erectopatent, petals slightly acute, fruit granulated."—*Br. Fl.* p. 187. *E. B. t.* 815. *Fl. Dan.* x. t. 1633.

On dry, barren, sandy heaths and commons; abundantly. *Fl.* June—August. 24.

7. *G. tricornis*, With. *Rough-fruited Corn Bed-straw*. *Three-horned Corn Goose-grass*. "Leaves 6—8 in a whorl linear-lanceolate their margins midrib and angles of the stem rough with reflexed prickles, peduncles axillary 3-flowered, fruit reflexed granulated."—*Br. Fl.* p. 190. *E. B. t.* 1641.

In dry and especially chalky cornfields and other cultivated ground; not unfrequent. *Fl.* June—October. *Fr.* September, October. ☉.

E. Med.—Cornfields above St. Lawrence, and above Sandown bay. At Bonchurch. Once found by me near Ryde, between Binstead and Ninham. Amongst turnips in a field between Kerne and Ashey down.

W. Med.—In a field near Street Place. Very widely dispersed, and sometimes profusely, in cornfields about Thorley and Wellow. Very plentifully in a field near Westover. Not unfrequent amongst corn near W. Cowes, as at Broadfield farm, &c. Fields near Carisbrooke, *Mr. D. Turner*, *Fl. Vect.*, and *Mr. Borrer* in litt. [Brighstone, near Moortown, *Dr. Bell-Salter*, Edrs.]

The whole herb of a pale yellowish green, strongly resembling the much more

common *G. Aparine*, and like it tenaciously adhering to every object with which it comes in contact, by means of its small but strong prickles. *Root* simple, slender and annual, mostly reddish, indicating the presence of a portion of the colouring principle* common to so many plants of this section of the Rubiaceæ. *Stems* often very numerous, at first ascending, afterwards quite prostrate or clinging to the stalks of corn for support, from a few inches to 2 feet in length, brittle, quadrangular, the angles winged, and very rough with small prickles pointing downwards. *Whorls* rather distant, of 8 linear-lanceolate mucronate leaves, their midrib beneath and slightly reflexed margins rough with prickles like those on the stem. *Peduncles* about as long as the leaves, mostly 3- (sometimes 1- or 2-) flowered; *pedicels* curved downwards in fruit, one or more of them often abortive, mostly simple, now and then forked and bearing a second flower. *Flowers* small, white, 4-cleft; segments of the *corolla* broadly ovate, with a short inflexed but not acuminate apex, which is thickened on the back at the point of inflexion. *Stamens* erect. *Stigma* capitato-convex. I find many of the flowers with two distinct styles, and occasionally 5-cleft and pentandrous, or trifid and with three stamens. *Fruit* large, the size of peppercorns, brownish when ripe, scabrous, punctate and cellular, covered with minute tubercles, naturally 2-seeded and with the form of a double globe, but one of the seeds often remains imperfectly developed, reducing the fruit to a simple sphere, with the rudiments of a second lobe attached to it at the base of the pedicel. *Seeds* round, hard. When ripe, the globular fruit, suspended from the triple downward-curved pedicels, exactly represents the three balls as they are often hung out over a pawnbroker's shop.

*** *Fruit hispid.*

8. *G. Aparine*, L. *Goose-grass. Cleavers or Cliver. Catchweed.* "Leaves 6—8 in a whorl linear-lanceolate hispid their margins midrib and angles of the stem very rough with reflexed prickles, peduncles axillary about 3-flowered, the stalks divaricating straight, fruit hispid."—*Br. Fl.* p. 190. *E. B. t.* 816.

About hedges and fences, in woods, thickets, cornfields and waste ground; abundant everywhere. *Fl.* May—September. ☉.

This species is very widely diffused over the earth's surface. It is common in America, where by some it is judged to have been imported from the old world. I have however found it in woods and other sequestered spots as far South as New Orleans, where it had quite the appearance of an indigenous plant.

The herb, chopped small, is given to goslings in this island.

III. *ASPERULA*, Linn. Woodruff.

"*Corolla* funnel-shaped. *Stamens* 4. *Fruit* without any distinct margin to the calyx."—*Br. Fl.*

1. *A. odorata*, L. *Sweet Woodruff.* "Leaves 6—8 in a whorl lanceolate, flowers panicled on long stalks, fruit hispid."—*Br. Fl.* 191. *E. B. t.* 795.

In woods, groves, thickets, and on shady hedgebanks; abundant in various places. *Fl.* April—June. ♀.

E. Med.—Plentiful in Quarr copse, &c.

W. Med.—Woods about Cowes.

Root pale red, rhizomatous, very slender, creeping far and wide, and emitting from the joints bundles of hair-like branched fibres, and an occasional stem at distant intervals. *Stem* erect or a little ascending at base, from 6 inches or less

* For a farther account of this colouring matter see *Rubia peregrina*.

to a foot or a foot and a half high, pale green, brittle, shining and glabrous, quadrangular, with a deep groove along each face, usually simple, but in the larger and more luxuriant specimens often slightly branched, swollen and sometimes purplish above the inferior whorls of leaves. *Leaves* in remote whorls, sessile, bright grass-green, firm and lucid, quite glabrous excepting at their point of junction with the stem, where are a line of short bristles pointing downwards, forming a ring or fillet below each whorl, rough along the margins and single prominent midrib with close-set spinules, which are very acute and pointing forward; leaves of the lowermost whorl or two very small, usually 6, obovate, widely spreading; of the succeeding verticils 8 or 9, much larger, oblanceolate, patent or suberect, mucronato-apiculate. *Flowers* snow-white, with a sweet honied fragrance, in small few-flowered, di-trichotomously forked panicles, that stand mostly 3 together at the summit of elongated grooved peduncles, which spring in an umbellate manner from the centre of the uppermost whorl of leaves, but are sometimes lateral and solitary. *Branches of the panicles* short, divaricate, the primary and often the secondary divisions furnished with one, two or more lanceolate bracts (reduced whorl) beneath the forkings; *pedicels* very short and unequal. *Corolla* funnel-shaped, somewhat fleshy, cleft for about $\frac{3}{4}$ of its length into 4 ovate or subelliptical, somewhat pointed, spreading segments, the apices of which are thickened at the back and slightly incurved. *Stamens* erect, a little longer than the obsoletely quadrangular tube, their filaments adnate with the corolla the greater part of their length; *anthers* white, elliptical or sublinear. *Style* much shorter than the stamens, cleft at summit or rather appearing as 2 styles united at top, surrounded at base by an elevated, dimidiate, tumid ring or gland on the summit of the ovary, which is nectariferous, and would be called a nectary by the older authors; *stigmas* very large, white, pellucid, globose.

2. *A. Cynanchica*, L. *Small Woodruff. Squinancy-wort.* "Leaves linear 4 in a whorl very irregular in the uppermost whorls, fruit granular scabrous."—*Br. Fl.* p. 191. *E. B.* t. 33.

On dry, open, hilly pastures, heaths and banks; abundant on the downs, &c., throughout the chalk districts. *Fl.* June—August. 24.

E. Med.—Very fine on banks at Ventnor. [On Ashey, Brading and Bembridge downs, abundant, *Dr. Bell-Salter*, Edrs.]

W. Med.—Everywhere about Carisbrooke. On Freshwater, Afton and other downs, plentiful but mostly very diminutive. Between Calbourne and Brixton. On the turf and banks along the shore from Norton westward.

IV. SHERARDIA, Linn. *Sherardia.*

"*Corolla* funnel-shaped. *Stamens* 4. *Fruit* crowned with the calyx."—*Br. Fl.*

1. *S. arvensis*, L. *Little Field-madder.* "Leaves about 6 in a whorl, flowers terminal sessile capitate."—*Br. Fl.* p. 190. *E. B.* t. 891.

In cornfields and other cultivated ground, fallows, waste places, and in woods, mostly on a light gravelly or sandy soil; very common. *Fl.* April—October. ☉.

Order XLI. VALERIANACEÆ, *Juss.*

"*Calyx-tube* adnate with the *ovary*, the *limb* toothed, or a thickened margin at the top of the *ovary*, at length unfolding into a feathery *pappus*. *Corolla* with 3—6 lobes. *Ovary* with 1 perfect cell and often 2 or 3 abortive ones. *Fruit* dry, indehiscent, 1-seeded. *Seed* pendulous. — Leaves *opposite*, *without stipules*."—*Br. Fl.*

I. CENTRANTHUS,* *DeCand.* Spur Valerian.

"*Corolla* 5-cleft, spurred at the base. *Stamen* 1. *Fruit* crowned with a feathery *pappus*."—*Br. Fl.*

A genus instituted by DeCandolle, for the reception of such of the Valerians as are monandrous and have the perianth distinctly spurred,—characters somewhat artificial, but authorized by the expediency of dividing so large a genus as Valeriana was left by Linnæus, and from which the present recedes considerably in habit. The few species composing it are natives of the S. of Europe, and are merely naturalized with us. They affect very dry warm situations, on old walls, rocks, &c., not moist, cool or alpine ones, like the true Valerians.

*1. *C. ruber*, DC. *Red Spur-flower. Red Valerian.* "Leaves ovate-lanceolate, spur much shorter than the ovary."—*Br. Fl.* p. 192. *Valeriana*, L.: *E. B.* t. 1531.

On old walls and rocks, sometimes also (but not in this island) in chalk-pits; rare, and not indigenous. *Fl.* June—September. 24.

E. Med.—On the garden wall of Morton house. Old walls at Brading.

W. Med.—On Yarmouth castle, abundantly, with the blossoms of every shade between white and deep red. Carisbrooke castle, *W. Wilson Saunders, Esq.*

A general favourite in gardens, from whence it easily disseminates itself by its volatile seeds on walls, rocks, ruins and chalky cliffs. Sir James Smith says it is certainly wild in the chalk-pits of Kent, and I have seen it growing abundantly on rocks at Plymouth, Dawlish, and other places in the W. of England, where, though perfectly naturalized, there are no grounds for pronouncing it indigenous.

II. VALERIANA, *Linn.* Valerian.

"*Corolla* 5-cleft, gibbous at the base. *Stamens* 3. *Fruit* crowned with a feathery *pappus*."—*Br. Fl.*

1. *V. officinalis*, L. *Common or Great Wild Valerian.* "Stem sulcate stoloniferous, leaves all pinnatifid, leaflets lanceolate nearly uniform."—*Br. Fl.* p. 192. *E. B.* t. 698.

In wet woods and thickets, by river- and ditch-banks, and in other marshy situations, in various places abundantly. *Fl.* May—August. 24.

By Yarbridge, and in various parts of Sandown level. Abundant about Alverstons, near the mill, &c. Great Birchmore farm. Common in swampy thickets along the course of the Medina above Newport, as at Blackwater. Plentiful in Horringford withy-bed. Abundant in willow-beds and other moist places about Budbridge. Moor-farm withy-bed.

* Name from *κεντρον*, a spur, and *ανθος*, a flower, in reference to the spur or gibbosity at the base of the corolla.

Tube of the corolla hairy within. Flowers white, with a faint tinge of rose-colour.

2. *V. dioica*, L. *Small Marsh Valerian*. "Flowers imperfectly diœcious, root-leaves ovate-spathulate stalked, those of the stem lyrate-pinnatifid, fruit glabrous."—*Br. Fl.* p. 192. *E. B.* t. 628.

In marshy or boggy meadows, but rarely. *Fl.* May, June. 24.

E. Med.—By a small stream at the West end of Briddlesford heath.

W. Med.—At Freshwater gate, with *Aspidium Thelypteris*, in a very deep bog, apparently composed chiefly of comminuted shells; rather plentifully. In some wet meadows near Thorley, *Rev. James Penfold !!!*

III. FEDIA, Vahl. Corn-salad.

"Corolla gibbous at the base; the limb 5-cleft. Stamens 2—3. Capsule crowned with unequal teeth, indehiscent, 3-celled, 1-seeded; 2 cells abortive or empty, rarely confluent. (Limb of corolla equal, and stamens 3 in all the British species)."—*Br. Fl.*

1. *F. olitoria*, Vahl. *Common Corn-salad*. *Lamb's Lettuce*. "Fruit laterally compressed oblique crowned with the 3 obscure inflexed teeth of the calyx, fertile cell corky at the back, sterile ones usually confluent, flowers capitate, bractæ leafy ciliato-dentate."—*Br. Fl.* p. 193. *Valeriana Locusta*, L.: *E. B.* t. 811.

β. Flowers white.

In light cultivated ground, cornfields, waste places, pastures, and on banks; common. *Fl.* April—June. ☉.

On the Dover; in Turner's nursery, &c., Ryde.

β. In a field near Shanklin.

Obs.—*F. carinata*, Lois., which is abundant in Normandy and in the Channel Islands, will probably be found here also, but its great resemblance to *F. olitoria*, from which it is scarcely distinguishable but by its fruit, renders its detection less easy. M. de St. Amans, in his 'Flore d'Agen,' makes them varieties, and says he has found the fruit of both on the same plant. I incline to the belief that *F. carinata* holds the same relation to *F. olitoria* as *F. Auricula* does to *F. dentata*, and that the value of each as distinct species is, to say the least, very problematical.

2. *F. Auricula*, DC. *Sharp-fruited Corn-salad*. "Capsule ovate acuminate with a narrow groove in front glabrous crowned with the single entire or 3-limbed tooth of the calyx, empty cells rounded at the back larger than the fertile one, cymes lax."—*Br. Fl.* p. 193. *E. B. Suppl.* t. 2809. *M. et K. Röhl. Deutschl. Fl. Gaud. Fl. Helv.* i. p. 84, t. 1 (bene). *Curt. Br. Entom.* xiv. t. and folio 668.

In cultivated fields, amongst corn, in various places, but rather less frequent than the next species, of which I more than suspect it to be merely a variety. *Fl.* June, July. ☉.

E. Med.—Cornfield by Anthony's common, near Ryde, abundantly. Cornfields about Haven-street. [Very frequent at Bembridge, *A. G. More, Esq., Edrs.*]

W. Med.—Cornfields about Freshwater, Yarmouth, &c. Not unfrequent about Cowes.

Root slender, tapering. *Stem* erect, 6—12 inches high, rounded, with projecting striæ, rough with minute scattered hairs, repeatedly and dichotomously branched, the branches widely spreading. *Leaves* linear, the lowermost pair or two spatulate, mostly quite entire, upper ones tapering to a bluntish point, with one or more pairs of teeth at their base; all clasping and generally slightly hairy. *Flowers* sessile in the terminal forks of the panicle, pinkish white, very small, a solitary one generally in the axils of the first and second bifurcations from the summit. *Capsule* subglobose, gibbous in front, finely granulated, about 5-ribbed, of 2 inflated empty or abortive cells before, with an evident furrow between them, and one fertile cell at the back, much smaller than the others and filled with the solitary seed. *Calyx* of 2 unequal lobes forming a crown to the fruit, that at the back over the perfect cell much the longer and more prominent, entire or obscurely tridentate, obtuse or pointed; the lower lobe over the two front or abortive cells 3- or 5-toothed.

I apprehend DeCandolle's suspicion that the present species is only a variety of *F. dentata* will be ultimately admitted. In this genus the capsule is naturally 3-celled and by abortion single-seeded; the two empty cells are either contracted to points, or inflated and turgid, in some instances merged into one by the obliteration of the septum, and by their greater or less prominence moulding the exterior shape of the seed-vessel. If we only conceive the two shrunken exterior cells in *F. dentata* to be moderately distended, we have the ampullaceous form of the capsule which distinguishes *F. Auricula*, between which and *F. dentata* I cannot find a single other permanent diagnostic. I think I may almost venture to predict a similar fate to *F. carinata*, which, it appears to me, stands in much the same relation to *F. olitoria* as *F. Auricula* and *F. dentata* do to each other, a less degree of turgidity in the two anterior or abortive cells sufficiently accounting for the difference of configuration in its capsule and that of *F. olitoria*.

3. *F. dentata*, Vahl. *Narrow-fruited Corn-salad*. "Capsule ovate flattish and 2-ribbed in front acuminate crowned with the prominent oblique unequally toothed calyx.

"a. Capsule glabrous, cup of the calyx small very oblique. Valeriana, *E. B.* t. 1370. Valerianella Morisonii, *DC.*

"β. Capsule clothed with spreading incurved rigid hairs, cup of the calyx small oblique."—*Br. Fl.* p. 193. *F. mixta*, Vahl. Valerianella mixta, Bertol. *Fl. Ital.* i. p. 188.

In cultivated fields, principally amongst corn; very common. *Fl.* June—August. ☉.

β. In a cornfield, with *F. Auricula*, by a creek of the Medina adjoining Medham brickfield, in great plenty, 1839. On these specimens the hairs are but sparingly found, and not easily seen without a glass.

Root annual, whitish, slender and tapering. *Stem* erect, slender, hollow, pale green or purplish, rounded, but traversed by 6 thin prominent ridges, arising from the decurrent margins of the leaves and their midrib or keel beneath; rough and scabrous, setosely hispid along the angles at its base, sometimes branching from the bottom, but more usually simple for a few inches above the root, where it forks into two main branches that are again repeatedly forked or sometimes trichotomously ramified, the branches widely divaricate, lax, spreading, wiry and flexuose, leafy only at the bifurcations, forming a straggling herb often of greater breadth than height, which is from about a few inches to a foot usually. *Leaves* opposite, sessile, semiamplexicaul and almost connate, pale yellowish green, minutely scabrous, thin and membranaceous, traversed by parallel anastomosing veins that are depressed above, and by a thin, sharp, scabrous keel underneath, their margins spinulose, and, as well as the keel, continued down the stem to the next pair below, forming so many sharp angles; root- and lower stem-leaves mostly entire, elongate-oblong or spatulate, very obtuse; those at the forks of the branches narrower, linear-elongate and somewhat pointed. *Flowers* extremely minute, in small, close, 2—3 forked, level-topped, corymbose clusters at the sum-

mit of the ultimate divisions of the stem. *Corolla* not a line in diameter, white, the segments tinged with pale pink, roundish entire.

Order XLII. DIPSACEÆ, Juss.

"*Calyx-tube* adnate with the *ovary*, surrounded by a scarioso *involucel* closely investing the ovary and ripe fruit. *Corolla* with the *limb* oblique, with an imbricated æstivation. *Stamens* 4—5; *anthers* distinct. *Ovary* 1-celled. *Style* 1, filiform. *Fruit* dry, indehiscent, 1-celled, with 1 pendulous *seed*, crowned with the pappus-like calyx. *Albumen* fleshy. — *Mostly* herbaceous plants, with *opposite* or *whorled* leaves. Flowers *pedicellate*, collected into a dense head, which is surrounded by a many-leaved *involucre*. Nearly allied to the *Compositæ*."—*Br. Fl.*

I. DIPSACUS, Linn. Teasel.

"*Receptacle* with spinous scales. *Involucel* with a thickened limb, forming a crown to the ovary. *Calyx* cup-shaped. *Stamens* distinct, about equal. *Fruit* 4-angled, with 8 pores or depressions. (Leaves *opposite*)."—*Br. Fl.*

1. *D. sylvestris*, L. *Wild Teasel*. "Leaves sessile undivided, upper ones connate, scales of the receptacle straight at the extremity, involucre curved upward."—*Br. Fl.* p. 195. *E. B.* t 1032.

β. Flowers white.

By roadsides, along moist hedges, on ditchbanks, and in wet woods and thickets; extremely common. *Fl.* July, August. ♂.

β. A few plants by the roadside between Calbourne and Shalfleet, with the common blue kind, 1844.

Seeds (achenia) brownish, sessile, finely downy with erect or appressed pubescence, oblong-truncate, quadrangular, with 8 prominent ridges and as many deep furrows, the summit with radiating fissures, bordered by the shallow persistent outer calyx, and crowned by the more deciduous, substipitate and very hairy inner one, each seed attached to the spongy receptacle at the base of a scale which enfolds it on two of its faces.

The water found collected within the cavity of the connate leaves must, I imagine, be secreted or eliminated by the plant itself, since I observed it to be abundantly furnished, during the present unusually dry and hot season, June, 1846, when no rain has fallen for some weeks, and very little dew has been deposited at night, yet the water remains unevaporated by the intense heat of the sun's direct rays. I have remarked, besides, that, on the same plant, whilst some of the leaves held water in considerable quantity, others contained either very little or none at all, which seems to point at a great inequality of the secreting activity of different leaves or other parts of the individual plant.

One of our tallest herbaceous plants; I have seen it about Ryde nearly 7 feet high. The flowers expand in successive rings or zones on the large oval heads, commencing about the middle of each.

II. KNAUTIA, Linn. Knautia.

"*Receptacles* hairy, without scales. *Involucels* with a 4-toothed minute limb. *Calyx* cup-shaped, with radiating teeth. *Stamens*

distinct nearly equal. *Fruit* upon a short stalk, 4-angled, with 4 pores or depressions."—*Br. Fl.*

1. *K. arvensis*, Coult. *Field Knautia*. Vect. *Gipsy* or *Egyptian Rose*. "Heads of many flowers, fruit crowned with very minute teeth, calyx with 8—16 somewhat awned cilia."—*Br. Fl.* p. 196. *Scabiosa*, L.: *E. B.* t. 659.

β. Flowers white.

γ. Smooth, all the leaves undivided.

δ. Florets of the centre equal to those of the circumference.

In dry meadows, pastures, cornfields, waste ground, and by waysides; very common. *Fl.* June—August. 24.

β. Cornfield near Wellow.

γ. Isle of Wight, *E. K.*, *Loud. Mag. Nat. Hist.* i. p. 83.

δ. Banks at Ventnor, and cornfields near St. Lawrence, *W. Wilson Saunders, Esq.* !!!

III. SCABIOSA, Linn. Scabious.

"*Receptacle* scaly. *Involucel* membranaceous or minute. *Calyx* of about 5 bristles. *Stamens* distinct, nearly equal. *Fruit* with 8 depressions."—*Br. Fl.*

1. *S. succisa*, L. *Devil's-bit Scabious*. "Segments of corolla 4 nearly equal, fruit angled with the depressions reaching nearly to the base and a very short crown, calyx-bristles conniving, cauline leaves dentate, heads of flowers nearly globose, leaves of the involucre in 2—3 rows."—*Br. Fl.* p. 195. *E. B.* t. 878.

In rather moist meadows, pastures, heathy places and open grassy woods; abundantly. *Fl.* August—October. 24.

Plentiful in Quarr copse, and most other woods near Ryde.

The first appearance of this plant in flower is the earliest but surest token that, whilst Nature wears yet an aspect green and fair, the noontide prime of the year has departed, and that ere long the "sere and yellow leaf" will give true but timely warning of the "dim declining days" that must succeed its fall. Faithful to the advent of this silent monitor, the great green locust (*Acrida viridissima*) begins to herald the approach of autumn with his shrill note of preparation, feebly at first and solitary; till, later, every hedge is resonant the livelong night with the ceaseless responsive chirp of these invisible choristers.

2. *S. Columbaria*, L. *Small Scabious*. "Corollas usually 5-cleft radiating, fruit subcylindrical with the depressions reaching to the base, limb of the involucre membranaceous entire patent about 20-nerved half the length of the fruit, stem hairy, radical leaves ovate-crenate or lyrate, those of the stem pinnatifid with linear segments."—*Br. Fl.* p. 195. *E. B.* t. 1311.

On dry calcareous or gravelly banks and pastures, also on the chalky downs in several places. *Fl.* June—August. 24.

E. Med.—Frequent on the chalk about Ventnor, Bonchurch, Appuldurcombe, &c. On sloping banks above the Culver cliff, Sandown bay. Chalk-pit amongst the cornfields above Sandown bay. [On Ashey down, in plenty, *Dr. Bell-Salter, Edrs.*]

W. Med.—On chalky slopes of the valley just beyond Apes-down farm, towards Rowledge, which are quite blue with this species and *S. succisa*. About Caris-

brooke. Everywhere in dry slopes about Swainston, Rowledge, &c.; also about Westover, in the great plantation, &c., often with lilac flowers.

Root thick, woody and creeping. *Stem* 6—18 inches high, round, clothed above with close-pressed deflexed hairs, smooth and naked for the most part towards the base, simple or branched in an opposite manner. *Radical leaves* partly ovate, blunt, on short petioles, variously cut, inciso-serrate, sometimes simply ovate or lanceolate, hairy; *those above* them pinnatifid, with lanceolate and cut segments, the uppermost deeply divided into linear-acute and nearly smooth segments. *Involucre* of many linear-acute leaves. *Florets* on a common receptacle, each accompanied by a lanceolate, concave, hairy scale.

This species does not appear to be a native of Ireland, and is by no means common in Scotland.

Order XLIII. COMPOSITÆ, Juss.

“*Calyx* adnate with the ovary; the *limb* entire or toothed or mostly expanded into a *pappus* which crowns the fruit. *Corolla* regular or irregular, filiform or tubular or ligulate, very rarely wanting. *Stamens* 5: *anthers* syngenesious in the perfect florets, furnished at the apex with a more or less evident *appendage*, and at the base with two *bristles* or *spurs*, or without any (ecaudate). *Ovary* 1. *Style* 1, sheathed in the perfect florets by the tube of the anthers, bifid at the apex when fertile. *Stigmas* forming 2 longitudinal rows along the inner surface of each branch of the style. *Fruit* an *achene* tapering to a beak, or without one, with a small or large epigynous disk. *Seed* erect, without *albumen*. *Embryo* straight. *Radicle* opposite the *hilum*.—Stems, in the *British* genera, herbaceous. Leaves opposite or alternate. Flowers or florets collected into a head (compound flower, L.), inserted upon a broad receptacle (which is either furnished with chaffy scales or naked) and surrounded by an involucre (calyx, L.)”—Br. Fl.

Suborder I. CORYMBIFERÆ.

“*Heads* either discoid; with the florets of each uniform and usually tubular, or those of the circumference filiform or tubular and pistillate only:—or rayed when furnished with a ray consisting of ligulate pistillate or neuter spreading florets. *Style* of the perfect florets not swollen beneath its branches.”—Br. Fl.

* *Pappus* pilose.

I. EUPATORIUM, Linn. Hemp-agrimony.

“*Achenes* angled or striated. *Pappus* pilose and rough. *Receptacle* naked. *Involucre* imbricated. *Styles* much exserted, with long blunt papillose branches. *Florets* all perfect (never yellow).”—Br. Fl.

1. *E. cannabinum*, L. Hemp-agrimony. Vect Raspberries and

Cream. "Leaves downy opposite subpetiolate 3—5 partite, their segments lanceolate deeply serrated, the middle one the longest, heads 5—6 flowered, scales of the involucre about 10, 5 outer ones short obtuse."—*Br. Fl.* p. 230. *E. B.* t. 428.

By rivers, streams, and ditches, in moist woods, hedges and other damp or marshy situations; extremely common. *Fl.* July—September. *Fr.* October, November. 24.

Stem erect, from 3 to 5 feet high, rounded, angular and striated, the centre filled with a delicate tissue of mostly hexagonal cells of various sizes, reddish, downy with fine, short, spreading and curved pubescence, more or less copiously and oppositely branched in a corymbose manner, the branches axillary, straight, sometimes a little alternate, erecto-patent. *Leaves* opposite, dull green, very shortly petiolate or sessile, 3- or (more rarely) 5-partite, their *leaflets* unequal, the middle one the longest, lanceolate taper-pointed, sometimes ovate or obtuse, or the uppermost entire, strongly, sharply and unequally serrated, entire at the tips, venoso-rugose and pubescent above, paler and very downy beneath and on the prominent midrib with jointed hairs, and sprinkled, besides, with imbedded resinous globules and granular points. *Flowers* in dense, much-branched corymbose tufts, terminating the stem and branches and leafy in their lower part, pale pinkish purple or flesh-coloured, rather agreeably scented, their pedicels and branches of the corymbs with a minute bract at or near the base of each. *Involucre* almost always 5-flowered, oblong, downy, much shorter than the florets, of about 8 imbricated, ovate or elliptical, erect, concave, obtuse and very unequal bracts, the exterior of which are shorter, smaller and greenish; the interior larger, broader, and coloured like the florets, with broad, blunt, green keels. *Receptacle* minute, naked. *Florets* tubular, sprinkled with resinous globules, the limb gradually dilating upwards, its margin in 5 broad, pointed, nearly erect segments. *Anthems* brownish, with oblong pale and membranous tips. *Styles* white, much protruded, crimson and bristly at the base just above their insertion, cleft about half-way down, the lobes linear, spreading or slightly recurved, papilloso-glandulose, flat on the inner side. *Achenium* blackish brown or pale, glabrous or somewhat hairy, linear-oblong, strongly 5-ribbed or angled, the intercostal faces minutely striated, sprinkled with yellowish, resinous, pedicellate globules; shorter than the dirty-white, sessile, spinuloso-serrated, single-rowed *pappus*, which about equals the florets in length, and is very caducous.

Our British species of *Eupatorium* is the only European representative of an extensive American genus, though not itself a native of that continent, and is one of the handsomest of its tribe.

II. TUSSILAGO, Linn. Coltsfoot.

"Heads monœcious, all alike. *Achenes* terete. *Pappus* pilose. *Florets* of the ray long, narrow, numerous, in many rows; of the disk few, sterile (both yellow). *Anthems* without bristles at the base. *Receptacle* naked. *Involucre* formed of a single row of equal, linear scales. (Scapes single-flowered, appearing before the leaves)."—*Br. Fl.*

1. *T. Farfara*, L. Coltsfoot. "Scape single-flowered imbricated with scales, leaves cordate-angular toothed downy beneath."—*Br. Fl.* p. 235. *E. B.* t. 429.

In moist fields, pastures, waste and arable ground; extremely troublesome in cornfields on our stiff clay soils on the North side of the island. *Fl.* March, April. *Fr.* May. 24.

Root whitish, scarcely branched, extremely rough and woody, with a central

medullary chord, running far in a horizontal direction and very difficult of extirpation. *Scapes* few or many, from the crown of the root, about a span high, simple, rounded and furrowed, hollow, covered with a loose cottony web intermixed with short glandular pubescence, and imbricated with alternate, erect, ovate or lanceolate, somewhat sheathing scales (*bracts*), of a brownish or purplish colour. *Flowers* terminal, solitary, at first drooping, afterwards erect, bright yellow, appearing before and during the development of the leaves. *Involucre* of numerous uniserial, unequal, blunt, 1- or 2-ribbed, linear, coloured scales (*bracts*) rather shorter than the rays of the florets, glanduloso-pilose, their tips glabrous. *Florets of the circumference* pistilliferous only, very numerous and slender, with long extremely narrow rays, rounded and entire at the apex. *Styles* much exerted, striated, shortly cleft into 2 small, erect, cylindrical lobes, covered with granular points. *Florets of the disk* comparatively few, the limb deeply divided into 5 lanceolate-acute segments, suddenly contracted beneath into the narrow cylindrical tube. *Anthers* without basal appendages, but with pale, glandular, acute tips, connivent over and concealing the *style*, which is not cloven, the truncate summit of its thick abruptly clavate extremity marked only by a transverse fissure. *Receptacle* quite naked. *Leaves* acquiring their full dimensions long after the flowers are past. *Achenium* linear, pale brown, bluntly angular, without ribs, glabrous. *Pappus* sessile, pilose, pure white, shining, single-rowed, spinuloso-dentate, striated, about three times the length of the seed.

Torrey and Gray, Fl. N. Am. ii. p. 94, affirm the styles and achenia of the disk to be abortive, and the pappus of the ligulate florets to be pluriserial.

The trivial name is probably an abbreviation of *facere fare*, or perhaps more directly from the Italian *far fare*, from its demulcent virtue in coughs and hoarseness, for which it is still an approved remedy. The bruised flowers have a weak aromatic smell like those of the garden Angelica.

My friend Mr. Gillson, of Stonepits, near Ryde, in whose garden this plant proved very troublesome, found that the creeping root was effectually destroyed by cutting off the plant just beneath the surface as often as it appeared, by a continual repetition of which he has completely succeeded in eradicating it.

The sweet-scented Butter-bur (*Petasites fragrans*), a native, I believe, of southern Italy in Calabria, upon mountains, is now quite naturalized on moist ditch-banks, under hedges near gardens, and in orchards, in very many parts of the island, it being a general favourite, from the delicate fragrance of its early flowers, which are produced in mild seasons as early as January or February. It is found all over the grounds at Swainston, where, Sir Richard Simeon assures me, it makes excellent shelter for pheasants; also at the foot of walls at Bembridge, and in the orchard and hedges adjoining, at E. Cowes Castle.

III. ASTER, Linn. Starwort.

"*Achenes* compressed. *Pappus* pilose, in many rows. *Receptacle* naked. *Involucre* imbricated, sometimes with a few scales on the peduncle. *Anthers* without bristles at the base. *Florets* of the disk yellow; of the ray purple or white, and in 1 or very rarely 2 rows."—*Br. Fl.*

The genus *Aster*, like that of *Eupatorium*, is pre-eminently American, Britain possessing but one and Europe but two or three species. The American *Asters* are almost innumerable, being probably greatly over-multiplied, from the difficulty attending their discrimination.

1. *A. Tripolium*, L. *Sea Starwort*. "Stem glabrous corymbose, leaves linear-lanceolate fleshy obscurely 3-nerved, scales of the involucre lanceolate membranous obtuse all erect and imbricated."—*Br. Fl.* p. 236. *E. B.* t. 87. *Tripolium vulgare*, Nees.

β. Ray partly or entirely wanting.

On muddy sea-shores, in salt-marshes, on the banks of tide-rivers, ditches and creeks; not uncommon. *Fl.* August—October. \mathcal{L} .

E. Med.—Ditches by the Dover, Ryde, and between Springfield and Sea View. At Wootton bridge.

W. Med.—Common in the marshes about Newtown and Yarmouth. Shorwell, *Rev. G. E. Smith*.

β . Brading harbour; about Yarmouth; in Newtown marshes and elsewhere occasionally.

Receptacle naked, alveolate, the foveæ with deeply lacinated membranous borders. *Achenia* brownish, linear-oblong, much compressed, glabrous or with a few scattered hairs and a small tuft at the base, scarcely angular, without striæ. *Pappus* dirty white, much longer than the seed, in several rows, simple, rough and striated.

This plant is very sweet or honey-scented in its blossoms, a circumstance, I believe, very unusual in this genus, as in most autumnal-flowering genera.

IV. *SOLIDAGO*, Linn. Golden-rod.

"*Achenes* terete. *Pappus* pilose, rough, in a single row. *Receptacle* naked. *Involucre* closely imbricated. *Anthems* without bristles at the base. *Florets* of the ray few, in one row, and, as well as those of the disk, yellow."—*Br. Fl.*

1. *S. Virgaurea*, L. *Common Golden-rod*. Stem erect pubescent, radical leaves petiolate mostly elliptical, cauline ones lanceolate acute deflexed entire or serrate nearly sessile, racemes paniced erect crowded."—*Br. Fl.* p. 236. *E. B.* t. 301.

In woods, groves and thickets, on hedgebanks, heaths, and dry, hilly, bushy places; abundant. *Fl.* July—October. *Fr.* October, November. \mathcal{L} .

A very variable plant, 1—3 feet high. *Root* thick, woody, with long simple fibres. *Stems* several, erect, roundish or angular, simple, reddish or greenish, leafy, more or less downy, zigzag or nearly straight. *Root-leaves* fascicled, on long channelled footstalks, elliptical or elliptical-lanceolate, acute, sometimes partly obovate and obtuse, crenate or even sharply serrated, and ciliated on their margins; *stem-leaves* scattered, lanceolate-acute, serrated or nearly entire, wavy, curled or twisted and deflexed, dark green, more or less hairy, covered with a close reticulation of veins beneath, nearly sessile, with a bundle of smaller leaves in the axil of each (the rudiments of flower-clusters). *Raceme* terminal, paniced, of many crowded erect clusters of bright golden-yellow flowers, on downy bracteated pedicels. *Scales* of the involucre green, linear, keeled, erect and appressed, acute, with membranous edges, torn or subciliate at the tips. *Florets of the ray* few, 5—10, the ray itself elliptical-oblong, 4-nerved, spreading, with 3 minute teeth at the apex, tube hairy without; *florets of the disk* tubular, deeply 5-cleft, segments acute. *Receptacle* cellular, deeply foveated, naked. *Achenes* pale brown, about 2 lines in length, slender, subfusiform, a little compressed, many- and prominently ribbed, truncate at top, sprinkled with short, white, erect, bristly hairs. *Pappus* simple, sessile, dirty white, single-rowed, very rough with erect spinules, rather longer than the fruit.

This, like *Eupatorium cannabinum*, is the only British or indeed European representative of a vast American genus, and is itself found on that continent, while the other is not. The botanical character of *Solidago* approaches very nearly that of *Aster*.

V. *ERIGERON*, Linn. Fleabane.

"*Achenes* compressed. *Pappus* pilose, rough. *Florets* of the disk fertile; of the ray numerous, in several rows, very narrow

(of a different colour from the disk). *Receptacle* naked. *Involucre* imbricated with linear scales. *Anthers* without bristles at the base."—*Br. Fl.*

1. *E. acris*, L. *Blue Fleabane*. "Peduncles 1-headed alternate somewhat corymbose, ray erect scarcely longer than the disk, inner pistillate florets filiform, pappus as long as the florets of the ray, leaves lanceolate obtuse."—*Br. Fl.* p. 235. *E. B. t.* 1158.

On dry gravelly, chalky or sandy fields, pastures and banks, by roadsides, and in waste barren places; not unfrequent. *Fl.* July—October. ☼.

E. Med.—Fields about Ninham farm, Beanacre farm, and Haven-street. Near Shanklin. In the plantation on Apse heath. Frequent in fields between Wootton creek and King's quay. Fields between Lynn and Stapler's farms. [Abundantly in the field on the right-hand side of the road ascending from Ryde Dover to St. John's toll-gate, *Dr. Bell-Salter*, Edrs.]

W. Med.—Roadside near Chessel farm, towards Calbourne. Calbourne village. Swainston. In the young plantations going up the hill to Mrs. Nash's, at Hampstead, in plenty. Fields near Pallance, abundantly. In a field near the Yar at Norton. About Colwell barracks, in plenty.

VI. SENECIO, Linn. Groundsel. Ragwort.

"*Involucre* cylindrical, its *scales* linear, equal, with several smaller ones at the base, their tips often brown. *Receptacle* naked. *Flowers* discoid or radiant. *Pappus* simple, sessile."—*Br. Fl.*

† *Ray of the ligulate florets small and revolute, or obsolete.* Groundsel.

1. *S. vulgaris*, L. *Common Groundsel*. "Ray revolute or usually wanting, leaves semiamplexicaul pinnatifid toothed, heads in clustered corymbs, involucre conical glabrous, outer scales very short, achenes silky."—*Br. Fl.* p. 237. *E. B. t.* 747.

A universal and most abundant weed in cultivated and waste ground, on old walls, roofs, hedgebanks, and amongst rubbish. *Fl.* all seasons. ☉.

2. *S. sylvaticus*, L. *Mountain Groundsel*. "Ray revolute sometimes wanting, leaves sessile pinnatifid lobed and toothed often eared at the base, involucre downy, outer scales very short glabrous, stem erect straight, heads corymbose, achenes silky."—*Br. Fl.* p. 237. *E. B. t.* 748.

On dry sandy or gravelly banks, pastures, and in heathy bushy places, woods and waste ground, but not very common. *Fl.* July—September. ☉.

E. Med.—On the Dover, Ryde, sparingly. About Sandown, not uncommon. Plentiful by the roadside from Upper Bordwood to Alverstone, near the latter place. Ditch-banks on the moors N. of Godshill, in several places. Sandy fields and banks under Bleak down.

W. Med.—Near Newport, along the road to Yarmouth.

†† *Ray of the ligulate florets conspicuous, spreading, not rolled back.* Ragwort.

3. *S. erucifolius*, L. *Hoary Ragwort*. Ray spreading, leaves pinnatifid somewhat revolute paler and spreading beneath, stem

erect loosely cottony, all the fruit hairy. *S. tenuifolius*, *Jacq. Fl. Aust.* iii. 42, t. 278. *Br. Fl.* p. 238.

In woods, on hedgebanks, by roadsides and borders of fields; a prevailing species in the island, especially in the chalky parts. *Fl.* July—September. *Fr.* October. 24.

Root somewhat creeping, abrupt (*præmorsa*), with long vertical fibres. *Stem* erect, subsimple or branched above, naked below, 2—4 feet high, roundish, filled with white pith, covered with loose cottony down. *Leaves* numerous, sessile, alternate, deeply pinnatifid, the segments variously toothed and lobed, dark green and almost glabrous above, more or less pale and hoary beneath, sometimes ovate and deeply incised, but not pinnatifid. *Flowers* numerous, in a corymbose panicle, bright yellow, paler than those of either *S. Jacobæa* or *S. aquaticus*, on rather slender peduncles, furnished with several minute awl-shaped bracts. *Rays* linear-oblong, spreading, revolute only when beginning to fade, or after having been some time gathered, their extremities with a small notch and an intermediate tooth. *Scales* of the involucre erect, equal, pointed with darkish tips, outer and lowermost linear-lanceolate, lax, all a little cottony. *Achenia* angular, deeply furrowed, densely covered with erect whitish hairs. *Pappus* simple, rough, about as long as the florets of the disk.

4. *S. Jacobæa*, L. *Common Ragwort*. "Ray spreading, leaves lyrate bipinnatifid, segments divaricated toothed glabrous, stem erect, achenes of the disk hairy, those of the ray glabrous, involucre hemispherical."—*Br. Fl.* p. 238. *E. B.* t. 1130.

In moist or dry meadows and pastures, on ditchbanks, waste ground, and by roadsides; very common.* *Fl.* July—September. 24.

5. *S. aquaticus*, Huds. *Marsh Ragwort*. "Ray spreading, leaves lyrate serrated glabrous the lowermost obovate and undivided, involucre hemispherical, achenes all glabrous."—*Br. Fl.* p. 238. *E. B.* t. 1131.

In wet meadows and pastures, on ditchbanks, sides of rivers, and in other marshy situations; common. *Fl.* July—September. 24.

VII. CINERARIA, Linn. Fleawort.

"*Pappus* pilose. *Receptacle* naked. *Involucre* cylindrical, of many equal, erect scales. (*Flowers* yellow)."—*Br. Fl.*

? 1. *C. campestris*, Retz. *Field Fleawort*. "Woolly, stem simple, root-leaves elliptical narrowed below nearly entire, those of the stem (small) lanceolate, flowers umbellate, achenes downy."—*Br. Fl.* p. 239. *Senecio*, *DC.* *C. integrifolia*, *With.*: *E. B.* t. 152.

On chalky downs and hilly limestone pastures; extremely rare, if ever found at all in the island. *Fl.* May, June. 24?

Belhan, Isle of Wight! *Pulteney*, *Bot. Guide*. A place quite unknown to me and to every one else of whom I have made inquiry.

Cin. alpina (*campestris*), Belhan, pl. I. W., *Dr. Pulteney* in *Hamps. Repository*, i. p. 121 (copied verbatim).

* The larva of the ragwort moth (*Callimorpha Jacobæa*), elegantly marked with external bands of black and yellow, is often to be seen with us feeding on the leaves of this and other species of *Senecio*.

VIII. INULA, Linn. Elecampane.

"*Achenes* terete or angled. *Pappus* pilose, in 1 row. *Receptacle* naked. *Involucre* imbricated. *Anthers* with bristles at their base. (*Flowers* yellow)." — *Br. Fl.*

1. *I. Helenium*, L. *Elecampane*. Vect. *Velvet Dock*. *Wild Sun-flower*. "Leaves amplexicaul somewhat toothed ovate wrinkled downy beneath, outer scales of the involucre ovate downy reflexed leafy, inner ones obovate, ray twice as long as the disk, achenes 4-angled glabrous." — *Br. Fl.* p. 240. *E. B. t.* 1546. *Curtis, Br. Entom.* xv.

In moist meadows, pastures and thickets, on hedgebanks, about the borders of fields and amongst bushes; not very common, though truly wild with us. *Fl.* July—September. 24.

E. Med. — In the first field within the walls of Quarr abbey after passing the copse, plentifully. Edge of the little brook by Binstead stone-pits. Stream-side in a wood near Haven-street, and close by Blackbridge. Near Beanacre farm. Near Rowlands, *Mr. Thos. Meehan*. Luccombe landslip, at the end near Bonchurch, *W. Wilson Saunders, Esq. !!!* Near Ashy, *Mr. J. Woods, jun., B. G.*

W. Med. — Border of a field about half a mile from Calbourne, near the road to Yarmouth, in some plenty. Field not far from Thorley church, and elsewhere in that parish. Plentiful in some fields between Wellow and Ningwood farm. Head of the marsh-land between Gurnet bay and Hardhill farm, by the brook. Waste places about Freshwater. About Weston farm, *B. T. W.* In a field by the Medina, a little above W. Cowes, in plenty, *Mr. S. Hailstone !!!* Near Wilmingham farm, *Rev. J. Penfold !!!* By Hebbard's farm, *Rev. W. Darwin Fox !!!*

The short, thick, tuberous and fleshy crown of the root emits several stout, tapering, branched fibres. *Stem* 3—5 feet high, stout, erect, solid and leafy, rounded below, bluntly angular and furrowed above, stained with purplish brown, branched only towards the summit, downy all over with simple jointed hairs. *Leaves* very like those of some *Verbascum*, ovate-acute, rugosely veined, those on the stem finely but unequally denticulato-serrate, yellowish green above with a short rough pubescence, whitish or hoary beneath with thick, close and very soft down, and reticulated with numerous prominent veins springing from the stout projecting midrib, which is often reddish on the upper side of the leaf; *radical leaves* very large, sometimes, including the winged petiole, upwards of 2 feet in length and 1 foot in breadth, their margins decurrent the whole length of the flattened upper side of the nearly cylindrical very long petioles, more coarsely and unequally serrated than the perfectly sessile, alternate, amplexicaul *stem-leaves*, which are only slightly decurrent on one side of their rounded auricular bases by an oblique attachment to the stem. *Flowers* terminal, solitary, very large, 2½ to 3 inches in diameter, golden yellow, with long, very narrow, linear, variously spreading rays. *Involucre* hemispherical, its scales (*bracts*) in several alternate rows, the more exterior leafy, broadly ovate, undulated, patent and downy with brownish tips, the innermost series paleaceous, erect, linear, smooth and shining, with pale-brown, scarioso, fringed or subserrated extremities. *Receptacle* plane, solid, quite naked, *foveæ* circular, with roughish but scarcely raised margins. *Florets of the disk* numerous, the tube a little bent in the middle, their segments thickened at the tips. *Anthers* with long awns at their base. *Styles* a little exserted; *stigmas* two flattened, spatulate, spreading lobes slightly channelled above. *Florets of the circumference* with long, linear, very narrow, unequally 3-toothed rays, and linear *stigmas*. *Pappus* simple, rough, in a single row, nearly as long as the florets.

The fresh root has a hot, bitterish, slightly aromatic taste.

2. *I. Conyza*, DC. *Ploughman's Spikenard*. "Leaves pubescent ovate-lanceolate serrated, the upper ones entire, stem herbaceous corymbose, scales of the involucre all linear recurved leafy, ray scarcely longer than the disk, achenes terete slightly hairy."—*Br. Fl.* p. 240. *Conyza squarrosa*, L.: *E. B.* t. 1195.

In dry rocky or bushy pastures, hedges and thickets, on sunny banks and billy slopes; frequent on the chalk and clay of the eocene deposits. *Fl.* August—October. *Fr.* October. ♂.

E. Med.—Plentiful at Bouchurch, Ventnor, St. Lawrence, and along the Undercliff. Frequent about Arreton. Plentiful near Brading, under the down towards Adgeton, &c. Plentiful on steep declivities above the road to Niton, just beyond St. Lawrence. Abundantly in the lane leading from the Ryde and Newport road to Quarr abbey, some of the plants 5 feet in height. Near Brading, Yaverland and Ryde, *B. T. W.*

W. Med.—In the valley between Apes down and Rowledge, near the latter place. About Northcourt. About Carisbrooke and the castle, *B. T. W.*

A large bushy plant. *Root* thick, with many long creeping fibres. *Stem* erect, 1—3 feet in height, stout, roundish or obscurely angular, dark red or purple, very downy, much branched. *Leaves* dark green, petiolate, ovate-lanceolate, uppermost sessile, downy, especially beneath, coarsely and unequally serrated, the uppermost nearly entire. *Flowers* in axillary and terminal corymbose clusters. *Achenia* brownish black, linear-oblong, a little curved and compressed, strongly ribbed with deep intermediate furrows, glabrous excepting a few scattered, erect, bristly hairs chiefly near their summit; inserted by their white, oblique and cartilaginous bases on the nearly plane and perfectly naked receptacle, which is covered with raised points for their attachment instead of alveoli. *Pappus* dirty white, single-rowed, about three or four times as long as the seed, simple, rough and striate.

3. *I. crithmoides*, L. *Golden Samphire*. "Leaves linear fleshy generally 3-toothed at the extremity, scales of the involucre appressed linear acuminate, ray nearly twice the length of the disk, achenes terete villous."—*Br. Fl.* p. 240. *E. B.* t. 68. *Curt. Brit. Entom.* vi. p. 243.

On sea-side rocks and banks, in muddy salt-marshes, and about the mouths of tide-rivers and creeks, but very local. *Fl.* July—October. ♀.

E. Med.—In a creek of the Medina, about half a mile above E. Cowes, near a wood, but very sparingly, *Mr. Hailstone!!*

W. Med.—In Newtown marshes, fringing the edges of the salt-pans, in very great abundance, 1838.

Root thick, fleshy. *Stems* numerous, 1—2 feet high, simple or branched, rounded, slightly angular, very leafy. *Leaves* sessile, fleshy, linear or strap-shaped, grooved, of a pale yellow or rather glaucous-green, not ribbed, ending in 3 points, the smaller ones in fascicles from the base of the larger, single-pointed. *Flowers* at the extremity of the stem and branches, on scaly peduncles, few together, $\frac{3}{4}$ of an inch in diameter, rather handsome, the ray bright yellow, disk orange. *Involucre* of several rows of linear-acute, green, imbricated scales closely applied to one another, not at all lax or spreading below. *Florets* on a naked fleshy receptacle, inserted in very distinct foveæ, those of the circumference with a narrow, spreading, finely reflexed ray. *Achene* rough with simple erect bristles. *Pappus* rough.

The whole plant has an aromatic not ungrateful smell, and a warm, pungent, saline taste, approaching in both respects to the true Samphire (*Crithmum maritimum*), for which perhaps it would be a good and certainly more accessible substitute.

IX. PULICARIA, Gært. Fleabane.

"Achenes somewhat terete. Pappus double: outer row short, membranous; inner pilose, rough. Receptacle naked. Involucre hemispherical, closely imbricated with numerous scales. Anthers with bristles at their base. (Flowers yellow.)—Br. Fl.

1. *P. dysenterica*, Gært. Common Fleabane. Leaves oblong cordate or sagittate amplexicaul crenato-denticulate wrinkled and downy, stem woolly corymbose, bracts of the involucre subulate shorter than the rays, inner pappus as long as the florets, achenia ribbed angular. Br. Fl. p. 241. Inula, L.: E. B. t. 1115.

In moist situations along roadsides, lanes, and open grassy places in woods, on ditch-banks, and in damp pastures; abundantly in most parts of the island. Fl. July—September. Fr. October, November. 4.

Root perennial, whitish and woody, branched, and creeping horizontally, with several long stout fibres and fleshy scaly runners. Stems erect, from 1 to 2½ feet in height, very leafy, solid, rounded, slightly angular, nearly simple in small specimens, copiously and alternately branched in a corymbose manner above, or often nearly from the base in larger plants, covered with a copious cottony down. Leaves numerous, alternate, 1 or 2 inches long, those of the stem broader and mostly spreading, of the branches narrower and more erect; oblongo-lanceolate, dull green, venoso-rugose, soft and downy, somewhat cottony beneath, cordate or sagittato-amplexicaul and dilated at their base, with rounded or acute auricles, that, like the crenato-denticulate and undulated margins of the leaf, are mostly deflexed. Flowers about an inch in diameter, bright golden yellow, solitary or subpaniculate at the extremity of the stem and branches, their peduncles thickened upwards, hollow, and covered with a cottony web. Involucre subhemispherical, its bracts very numerous, imbricated, linear-subulate, plane and membranous, pale with a green centre, hairy, somewhat jagged and ciliated on their margins, glabrous and shining on their inner side, the outer ones densely woolly, lax, with recurved tips. Florets of the circumference very numerous, in several rows, with moderately long, spreading, ligulate, 3-toothed rays, the tube slender and glabrous. Receptacle nearly plane, rough with the sharp jagged edges of the deep alveoli. Achenium brownish, oblong, angular, straight, strongly ribbed, the ridges rough in their upper part with short erect bristles. Pappus double, the outer one membranous, cup-shaped, very short, its margin laciniato-dentate; inner pilose, rough, about as long as the floret, tawny-brown when ripe.

The odour of the bruised herbage is justly compared by Sir James Smith to that of peaches, and is quite different from the bitter smell of the flowers and the hot pungent flavour of the root.

2. *P. vulgaris*, Gært. Small Fleabane. Leaves lanceolate nearly entire waved and hairy somewhat clasping, stem much branched downy, florets of the circumference with extremely short rays scarcely longer than the subulate involucral bracts, inner pappus much shorter than the florets, achenium terete. Br. Fl. p. 241. Inula Pulicaria, L.: E. B. t. 1196.

In moist spots where water has stood during winter, on village-greens, and about farm-houses in places trodden by cattle; not very frequent. Fl. July—September. ☉.

E. Med.—Plentiful on St. Helen's green.

W. Med.—Walpen farm.

Six inches to a foot or more in height. Root annual, very long and tapering, with scarcely any fibres. Stem erect, copiously and repeatedly branched, rounded,

purplish and downy, very leafy. *Leaves* sessile, scattered, very small, the largest scarcely above an inch long, dull grayish green, waved and twisted, their edges uneven but not serrated, pointed and hairy; at the forks of the branches more or less clasping. *Flowers* solitary, at the end of each ramification, very small (not $\frac{1}{4}$ an inch across), dark yellow, with a pleasant odour when bruised, somewhat resembling that of ginger or the leaves of the Sweet Gale (*Myrica Gale*), otherwise nearly scentless. *Involucre* truly hemispherical, very hairy, with several rows of unequal, linear-lanceolate, erect *bracts*, which are green, with pale edges, the tips of the lower ones often a little spreading but not recurved. *Florets of the circumference* with suberect, concave, 3-toothed and very short *rays*, scarcely exceeding the involucre bracts; *those of the disk* very numerous, 5-cleft, the segments acute, sprinkled with glandular points, tube nearly cylindrical throughout (not suddenly enlarged at the top as in most plants of this order). *Anthers* membranaceous, with a pair of short bristles at the base of each. *Styles* exserted, bifid, the segments obtuse, spreading. *Achenium* brownish oblong, without ribs or striæ, covered with erect bristles. *Pappus* double, outer cup-shaped, deeply cleft into acute, bristle-like and jagged teeth; inner of a few hairs about half as long as the florets. *Receptacle* plane, quite naked, the margins of the shallow alveoli smooth.

This species is readily distinguished from the much commoner *P. dysenterica* by its humbler, more branched and diffuse habit, much smaller, less hoary leaves and stem; by its paler, much less conspicuous flowers, not half the size of that species; by the truly hemispherical calyx; extremely short ray; and, lastly, by the pappus, which in *P. vulgaris* is scarcely half the length of the florets. This species has a much more limited range than the last, being mostly restricted to the S.E. counties of England, and is as yet unrecorded as a native of either Scotland or Ireland. On the Continent it does not extend so far North as Scandinavia.

X. GNAPHALIUM, Linn. Cudweed.

“*Heads* heterogamous, with one or numerous rows of filiform pistillate florets in the circumference. *Pappus* pilose. *Receptacle* flat and quite naked. *Involucre* imbricated, the scales scarious towards the extremity. *Anthers* with bristles at the base. *Style* of the perfect florets with short truncated branches ciliated at the apex.”—*Br. Fl.*

1. *G. uliginosum*, L. *Marsh Cudweed*. “Stem very much branched diffuse woolly, leaves linear-lanceolate downy, heads in terminal crowded tufts which are shorter than the leaves.”—*Br. Fl.* p. 232. *E. B. t.* 1194.

In sandy, gravelly and muddy spots where water has stood, in half-dried-up ditches, pools and pits, and in bare damp places by roadsides, &c.; common. *Fl.* July—September. ☉.

The stems of this plant are often close-pressed to the ground, and not at all erect or even ascending, as I find it at Sandown and elsewhere.

? 2. *G. sylvaticum*, L. *Highland Cudweed*. “Stem simple nearly erect downy, heads axillary forming an interrupted leafy spike, leaves linear-lanceolate downy.”—*Br. Fl.* p. 232. *G. erectum*, *Huds.*: *E. B. t.* 124.

In dry sandy woods, thickets, pastures and heathy places; said to inhabit the Isle of Wight, but I have never met with it myself, or seen indigenous specimens from others. *Fl.* July—September. 24.

For a notice of the periodical appearance and disappearance of this species in

localities where it once abounded, see a paper by Mr. E. Lees, in *Phytol.* No. 95, for May, 1849.

XI. FILAGO, Linn. Filago.

"*Heads* heterogamous, with one or more rows of filiform pistillate florets in the circumference. *Pappus* pilose, of the outermost row of pistillate florets very caducous or wanting. *Receptacle* conical, with 1—5 rows of scales within or among the filiform florets. *Involucre* imbricated, conical, of a few acuminate scariosse scales. *Anthems* with bristles at the base. *Style* of the perfect florets with short truncated branches ciliated at the apex."—*Br. Fl.*

1. *F. germanica*, L. *Common Filago*. "Stem erect usually proliferous at the summit, leaves downy, heads globose-capitate in the axils of the branches and terminal, scales of the involucre cottony with the points cuspidate and glabrous."—*Br. Fl.* p. 233. *Gnaphalium*, *Huds.* : *E. B.* t. 946.

[*β*. "Heads sharply pentagonal, scales yellowish white, leaves of a leaden gray colour, spatulate. *F. spatulata*, *Presl.*"—*Br. Fl.*—*Edrs.*]

In dry pastures, fields, waste and fallow-ground, on hedgebanks, by roadsides, &c.; very universally. *Fl.* June—September. ☉.

[*β*. From Hulverstone to Kingstone, in many places; rather common near Brighstone, on the green-sand, *A. G. More, Esq.*—*Edrs.*]

Achenes very minute, pale brown or grayish, obovate-oblong, somewhat angular and compressed, sprinkled with extremely short pellucid points, like bristles, directed downwards. *Pappus* white, pilose, single-rowed, several (4 or 5) times longer than the seed, roughish, spreading and recurved, deciduous.

2. *F. minima*, Pers. *Least Filago*. "Stem erect dichotomously branched, leaves linear-lanceolate acute cottony flat appressed, heads conical few in lateral and axillary tufts which are longer than the leaves."—*Br. Fl.* p. 233. *Gnaphalium*, *Sm.* : *E. B.* t. 1157. *F. montana*, *DC.* (not *Linn.*)

On barren sandy or gravelly heaths, banks and pastures, but apparently not very common. *Fl.* June—September. ☉.

E. Med.—By Sibbeck's farm, near Niton. Sandy field at the foot of Queen Bower. On Bleak down, in several places. Gravel-pit on St. George's down. Sandy field on the descent from St. George's down to Arreton, in plenty.

W. Med.—On Buck's heath, between Kingston and Shorwell, in plenty.

** *Pappus* none, membranous, or of 2 or 3 bristles.

† *Receptacle* without membranous scales (paleæ).

XII. BELLIS, Linn. Daisy.

"*Achenes* compressed, with a minute epigynous disk. *Pappus* none. *Receptacle* naked, conical. *Involucre* hemispherical, its scales obtuse, equal, in a single row. (Florets of the disk yellow, those of the ray white tinged with red)."—*Br. Fl.*

"Star of the mead! sweet daughter of the day,
Whose opening flower invites the morning ray,
From thy moist cheek and bosom's chilly fold,
To kiss the tears of eve, the dew drops cold!
Sweet Daisy, flower of Love! when birds are pair'd,
'Tis sweet to see thee with thy bosom bared,
Smiling in virgin innocence serene,
Thy pearly crown about thy vest of green.
The lark, with sparkling eye and rustling wing,
Rejoins his widow'd mate in early spring,
And, as he prunes his plumes of russet hue,
Swears on thy maiden blossom to be true."

Leyden, Scenes of Infancy, Part II.

"Daisies, ye flowers of lowly birth,
Embroiderers of the carpet earth,
That stud the velvet sod;
Open to spring's refreshing air,
In sweetest smiling bloom declare
Your Maker, and my God."

Clare, Song of Praise.

* * * * * "Trampled under foot
The Daisy lives, and strikes its little root
Into the lap of time: centuries may come
And pass away into the silent tomb,
And still the child, hid in the womb of time,
Shall smile and pluck them, when this simple rhyme
Shall be forgotten, like a churchyard stone,
Or lingering lie unnoticed and alone.
When eighteen hundred years, our common date,
Grow many thousands in their marching state,
Aye, still the child with pleasure in his eye
Shall cry—the Daisy! a familiar cry—
And run to pluck it, in the self-same state,
As when Time found it in his infant date;
And like a child himself when all was new
Might smile with wonder, and take notice too,
Its little golden bosom, filled with snow,
Might win e'en Eve to stoop adown, and show
Her partner Adam, in the silky grass,
This little gem, that smiled where pleasure was,
And loving Eve, from Eden followed ill,
And bloomed with sorrow, and lives smiling still.
As once in Eden under heaven's breath,
So now on earth, and on the lap of death
It smiles for ever."

Clare, Rural Muse.—The Eternity of Nature.

1. *B. perennis*, L. *Common Daisy*. "Perennial, scape single-headed, leaves spatulate obovate, crenate 1-nerved."—*Br. Fl.* p. 241. *E. B.* t. 424.

β. Proliferous.

In meadows, pastures, on grassy banks and short turf by roadsides and borders of fields, paths, &c.; profusely everywhere. *Fl.* April—June (less copiously the year round). 24.

β. A wild specimen of this not uncommon garden monstrosity, known by the name of Hen and Chickens Daisy, was found by *Mr. G. Kirkpatrick* in a field by Newport, 1839.

In meadows, pastures, and on grassy slopes the "wee modest crimson tippet flower," made classical by the genius of Burns and the early associations of us all, greets the eye; nor is it unwelcome or obtrusive anywhere but on the smooth shaven lawn or trim grass-plot, which, in spite of the conventional disapprobation its usurpation receives, we cannot but think rather adorned than defaced by its presence. And who is there that in childhood's hour, the brief but joyous interval betwixt helpless infancy and sportive youth, hath not joined the prattling rosy throng

"To gather Kingcups in the yellow mead,
And prink their hair with Daisies"?

XIII. CHRYSANTHEMUM, Linn. Ox-eye.

"Achenes of the disk somewhat terete: epigynous disk large. Pappus 0. Receptacle naked. Involucre hemispherical or nearly flat; the scales imbricated, membranaceous at their margins."—*Br. Fl.*

1. *C. Leucanthemum*, L. *Great White Ox-eye. Ox-eye Daisy. Moon Daisy.* Vect. *Bozzom*. "Leaves oblong obtuse cut and pinnatifid at the base, radical ones obovate petiolate, stem erect branched (ray white). *Br. Fl.* p. 241. *E. B.* t. 601.

Far too abundant and injurious in meadows, pastures and mowing lands; less frequent and hurtful in cornfields, waste and cultivated ground, woods and by waysides, though everywhere distributed. *Fl.* May—July. 24.

This species has become a troublesome intruder in pasture- and meadow-land in America, where I have traced it as far S. as Savannah (lat. 32°).

2. *C. segetum*, L. *Yellow Ox-eye. Corn Marigold.* Vect. *Yellow Bozzum.* Hants, *Bothen*. "Leaves amplexicaul glaucous inciso-serrate above toothed at the base (ray yellow)."—*Br. Fl.* p. 242. *E. B.* t. 543.

In cultivated fields, amongst corn (mostly barley), turnips, potatoes and other crops, especially where the soil is sandy; not uncommon, and sometimes much too plentiful in particular districts of the island. *Fl.* June—October. *Fr.* October. ☉.

E. Med.—Abundantly in fields near Rookley. Cornfields between Lake and Sandown. Abundantly in some fields near Appleford farm. About Buddbridge and Bagwick farms, and elsewhere about Godshill. Fields about Shanklin. Yarbury hill, Niton, *Miss Kirkpatrick*. [On St. Helen's spit, by the ferryhouse, *Dr. Bell-Salter*, Edrs.]

W. Med.—Cornfield near Werrer farm. Common about Kingston and Corve. Colwell.

Root whitish, of one or more principal and innumerable capillary fibres. Stem erect, 1—1½ feet high, much branched, rounded, solid, quite glabrous, with greenish or reddish striæ, very leafy. Leaves pale glaucous green, rather fleshy, alternate, lower ones tapering into footstalks, cauline ones sessile, semiamplexicaul, glabrous except a few scattered bristles, like hairs, near the base of each on the upper side; all inciso-serrate, toothed at the base, more or less deeply cut above the middle in a 3-lobed manner, the segments acute and again cut or lobed, with a small point; the uppermost leaves (especially in much-branched specimens) are sometimes entire or very nearly so. Flowers terminal, solitary, very showy, of a rich golden yellow, often above 2 inches in diameter, on hollow peduncles deeply furrowed and enlarged upwards. Scales of the involucre glaucous green, ovate, obtuse, with brownish chaffy tips. Receptacle plane, formed beneath of loose, spongy, cellular tissue, quite naked. Florets all fertile; ray extremely broad, ovate, truncate, unequally bifid or trifid at the summit; limb of the central

florets in 5 acute reflexed segments, covered with conical glands or papillæ. *Style* included, cleft; *stigmas* flat, glandular. *Achenia* whitish brown, a line or more in length, oblong, a little tapering and curved, cylindrical or angular, truncate at both ends, deeply grooved or fluted, glabrous, those of the ray subcompressed, and dilated laterally into a thin, often very broad, alate margin. *Receptacle* naked, slightly convex, blackish, and thickly dotted with the very shallow circular alveoli, that are surrounded by a minute scariose border.

XIV. PYRETHRUM, *Haller*. Feverfew.

"Fruit crowned with a membranaceous border. *Receptacle* naked. *Involucre* hemispherical or nearly flat, the scales imbricated, membranaceous at their margins."—*Br. Fl.*

†? 1. *P. Parthenium*, Sm. *Common Feverfew*. Vect. *White-wort*. "Leaves petiolate flat bipinnate the segments ovate cut, peduncles branched corymbose, stem erect, involucre hemispherical downy."—*Br. Fl.* p. 242. *E. B. t.* 1231. *Matricaria*, L.

In waste rubbishy places, on banks, wall-tops, by waysides and about hedges, chiefly in the neighbourhood of habitations; not unfrequent, but scarcely appearing as if truly indigenous. *Fl.* July, August. 4 or 5 (Sm.)?

E. Med.—On the Dover by Ryde castle, and at Binstead. Wall at E. Cowes. Quarr abbey. Abundant on the high bank by the entrance-gate at Steepbill. Lucombe, Shanklin chine, &c., *B. T. W.* Bembridge, on waste ground near the sea, *Miss Theodora Price !!!*

W. Med.—At Paradise, near Newport.

Root (rhizoma) creeping horizontally and sending out abundant pale slender fibres. *Stems* about 1½ or 2 feet high, erect, rounded, solid and furrowed, leafy, more or less downy, usually simple near the base, much and alternately branched above, the branches almost erect. *Leaves* alternate, petiolate, pale green, somewhat gray or hoary with fine short pubescence, pitted all over beneath with minute depressions, deeply pinnato-pinnatifid, of 3 or 4 pairs of ovate or ovate-oblong, flat, variously cut lobes, whose segments are mostly obtuse, broad, rounded and entire, each tipped with a minute pellucid point. *Petioles* flat above or semiterete, slightly winged. *Head of flowers* (anthoidia) corymbose, rather small, about ½ inch in diameter, solitary, on long, deeply grooved, angular, simple or slightly branched peduncles, that are gradually enlarged upwards, and mostly furnished at no determinate distance from their summit with one or sometimes two minute subulate bracts. *Involucre* depresso-hemispherical, its bracts closely imbricated, unequal, linear-oblong, obtuse, a little downy, with a thick, prominent, dark green keel, and broad, transparent, ciliato-laciniated margins. *Receptacle* nearly hemispherical, quite naked, with circular, very shallow, scarcely at all depressed alveoli, their edges quite smooth and even. *Florets of the disk* very small and numerous, yellow, segments of the limb short, triangular, thickened, and sprinkled with a few resinous globules; *florets of the circumference* rather few (about 10 or 12), distantly inserted, very short, green, glabrous, segments of the *style* straight, as long as the tube; *ray* short and broad, ovato-elliptical, 2- or 3-toothed at the summit. *Achenium* glabrous, quadrangular, slightly curved, strongly and longitudinally ribbed, the costæ with a row of crystalline points.

A common herb in rustic gardens, from whence it readily escapes. The English name, significant of its antipyretic reputation, is either a corruption of *febrifuge*, or more likely of *fiore feu*, from the ardour of the hot fit it was supposed to have the power of allaying in intermittents; or it may be from the heating quality attributed to the plant itself by the older writers, who prescribed its employment in diseases the most opposite in their nature. The whole secret of its efficacy lies in its powerfully bitter and tonic properties.

2. *P. inodorum*, Sm. *Corn Feverfew*. *Scentless Mayweed*. "Leaves sessile bipinnatifid the segments capillary, stem branched spreading, border of the fruit entire." — *Br. Fl.* p. 242. *E. B. t.* 676. *Matricaria*, L.

In waste and cultivated ground, fields, pastures, and by roadsides; abundant everywhere. *Fl.* May—November. ☉.

3. *P. maritimum*, Sm. *Sea-side Feverfew*. "Leaves sessile doubly pinnate, segments fleshy linear entire bluntish convex above, principal ribs keeled beneath, stem branched, diffuse, heads solitary, involucre scales lanceolate obtuse, fruit slightly rugose and with two elongated glandular spots on the external face just below the lobed elevated border." — *Bab.* *E. B. t.* 971. *Matricaria inodora*, L., *β. maritima*, *Br. Fl.* p. 242.

On banks and waste ground by the sea-shore, in many places, but I fear not really distinct from *P. inodorum*. *Fl.* June—November. ♀? (ex Sm.)

E. Med. — At Sandown. Ventnor. [The shore at Bembridge, under Tyme house, *A. G. More, Esq., Edrs.*]

W. Med. — Egypt. Near Cowes, and most parts of the coast, *B. T. W.*

Matricaria Chamomilla, L., was observed, in small quantity, growing at the Vicarage, Newchurch, but there is reason to believe that it was introduced from the opposite coast of Hampshire, where it is not uncommon. Mr. Loe, jun., remarked that the plant smells of apples, an observation confirming the propriety of the name Chamomile, probably applied to this species.

†† *Receptacle paleaceous. Pappus none.*

XV. ANTHEMIS, Linn. Chamomile.

"*Achenes* terete or obscurely 4-angled. *Pappus* a membranaceous border or 0. *Receptacle* convex, chaffy. *Involucre* hemispherical or nearly plane, the scales imbricated, membranaceous at their margins. *Florets* of the *disk* terete, of the *ray* oblong-linear." — *Br. Fl.*

1. *A. nobilis*, L. *Common or True Chamomile. Sweet Chamomile. Roman Chamomile.* "Leaves bipinnate, segments linear-subulate a little downy, receptacle conical its scales scarcely longer than the disk." — *Br. Fl.* p. 243. *E. B. t.* 980.

On dry pastures, banks, heaths and commons; abundant in various parts of the island. *Fl.* June—September. ♀.

In a pasture-field close by the Vernon hotel at Springfield, near Ryde, and on St. Helen's green, in plenty. At Sandown. Abundant on Lake common, &c. A var. with full or double flowers occurs sparingly on the moor near the Wilderness.

Involucre hemispherical. *Scales of the receptacle* delicately membranous, concave, much broader than in *A. Cotula*. *Receptacle* acutely conical when ripe. *Achenium* small, brownish, ovato-oblong, rounded and obtuse at the summit, somewhat pointed at the lower end, terete or obscurely angular, longitudinally rugoso-striate, quite glabrous.

The extremely short, fleshy and somewhat hoary segments of the leaves, with the procumbent habit and pungently aromatic odour of the bruised flowers, will enable any one readily to distinguish this valuable medicinal plant from several other British species of the same genus which greatly resemble it. The true

Chamomile is quite a western and maritime species; a stranger to the inland countries of the Continent, where its place is often supplied by the Wild Chamomile (*Matricaria Chamomilla*), which possesses in a less degree the tonic and aromatic qualities of the genuine plant.

2. *A. arvensis*, L. *Corn Chamomile*. "Leaves bipinnatifid, segments linear-lanceolate pubescent, receptacle conical its scales lanceolate, fruit crowned with an entire pappus."—*Br. Fl.* p. 244. *E. B.* t. 602.

In sandy or chalky fields, amongst grass, clover, turnips, &c. (I have never seen it here in corn); more rarely on hedgebanks and waste ground, but by no means common with us or persistent where found, having perhaps been introduced with grass-seeds from the mainland of England or the Continent. *Fl.* May—July. ☉ or ♂?

E. Med.—In several places about Sandown and Shauklin, as in fields near Lee farm and between Cliff and Hide. Arreton. Field below Ashey down. In grass-fields at Vinnicombe barn, by Newchurch. Clover-field between Weeks's and Little Smallbrook. Sparingly in the glebe at Newchurch. Plentifully in a field of clover near Little Duxmore. In a grass-field near the St. Boniface hotel, Bonchurch, sparingly. In a lay-field at Sandford, near Godshill. Near East-Standen farm.

W. Med.—In a field near Idlecumbe. About Swainston. Plentiful about Colwell and most parts of the island, *B. T. W.*

Root annual, fibrous. *Stems* several, procumbent at the base, diffuse and spreading, much branched, and like the rest of the plant more or less clothed with gray hoary pubescence. *Leaves* short, a little fleshy, doubly pinnatifid, the segments linear-lanceolate, cut and pointed. *Flowers* solitary, on long peduncles at the end of the branches, large, white and handsome, approaching those of *Chrysanthemum leucanthemum* in size. *Involucre* hemispherical, cottony, its scales ovate, very obtuse, with a broad, membranous, pellucid border. *Paleæ* linear-lanceolate, concave, tapering at each end, very acute, about as long as the florets. *Ray* broad, white, deflexed at night; *florets of the disk* bright yellow, all perfect (hermaphrodite); *those of the ray* without stamens (female). *Achenes* pale brown or nearly white, glabrous, oblong-obconic, somewhat obsolete quadrangular, the faces deeply furrowed longitudinally, but not transversely wrinkled, their truncate summits crowned in the inner central or uppermost florets with a very thin, shallow, erect border, which in the inferior florets becomes flat, spreading or discoid, and plicately rugose.

This species bears much resemblance to some of the more hairy forms of *A. Cotula*, which in pubescence and breadth of the segments of its leaves approaches the former pretty closely; but *A. arvensis* may be always distinguished from it by its lax procumbent habit, generally larger and fewer flowers, that are on very long hairy peduncles a little enlarged upwards, and not disposed in the same paucicled or corymbose manner as in that species.

The bruised flower-heads have a weak smell of Chamomile, of which the herbage is quite destitute.

The Rev. G. E. Smith remarked to me that this species is the earliest in flower of the tribe, beginning to blossom at least in May, if not earlier, when it is conspicuous in clover-fields, but later in the season is not so readily detected, in consequence probably of being confounded and overlooked amidst the predominance of its more abundant allies, *Pyrethrum* and *Chrysanthemum*.

I remarked in June, 1848, that in a field of Vetches at Newchurch, upon which sheep were penned for the purpose of eating it down, the *Anthemis arvensis* was cropped close to the root by those animals, and, though excessively abundant, not a plant was spared by them. The plant ought perhaps rather to be encouraged than otherwise in our clover- and grass-fields, as its sweet aromatic qualities are probably salutary to stock of most kinds.

3. *A. Cotula*, L. *Stinking Chamomile. Stink Mayweed.* Vect. *Morgin* or *Mavin*. "Leaves bipinnatifid glabrous their segments subulate, receptacle conical its scales linear setaceous, pappus none, tube of the corolla 2-winged." — *Br. Fl.* p. 244. *E. B. t.* 1772.

β. Leaves fleshy, dotted; stem procumbent.

In waste, pasture, cultivated and fallow-ground, on dunghills, by roadsides, &c.; far too abundant amongst corn for the credit of our agriculture. *Fl.* June — September. ☉.

β. In loose sand on the beech at Norton.

Root annual, whitish and tapering. *Stem* about a foot high, much branched, erect or ascending, solid, roundish, furrowed, smooth or sometimes a little hairy. *Leaves* sessile, alternate, pale green, bipinnatifid, their segments short, linear, various in breadth, rather fleshy, cut and bristle-pointed, smooth or slightly downy. *Flowers* solitary at the naked extremities of the stem and branches, rather handsome from the bright yellow of the disk and the pure white of the broad rays. *Involucre* hemispherical, cottony, its scales ovate or lanceolate, with a narrow membranous edge and green central rib, closely imbricated in two or three rows. *Receptacle* cylindrico-conical. *Paleæ* greenish, setaceous, curved, wanting to the florets of the circumference and to those of the exterior portion of the disk, extremely narrow. *Florets of the disk* golden yellow, very numerous, the tube short, divided into 5 acute, short, fleshy and glandular segments. *Styles* broad, flattened and grooved longitudinally, spreading; *stigmas* two flat brushes of gland-tipped hairs or setæ. *Florets of the circumference* neuter (without stamens or pistils), their rays broadly ovate or elliptical, toothed, deflexed at night or soon after the plant is gathered. *Achenia* very rough.

β. In this variety, which I at first thought to be *Pyrethrum maritimum*, besides the fleshy leaves and procumbent stem, the paleæ of the receptacle appear to be broader or less setaceous than in the usual inland condition of the species. Plants of very different orders and genera evince this tendency in the leaves to become thickened or fleshy when growing near the sea. I have remarked it to be strikingly the case with *Solanum Dulcamara* on the beach at Gosport and elsewhere, and very conspicuously so in the common Box-thorn (*Lycium Barbarum*) in the garden of the 'George' hotel, Yarmouth.

This plant is well known to reapers by the name of *Morgin*,* and unanimously accused of blistering the feet, hands and open bosoms of those employed in making up the corn into shocks. That the imputation is well founded, the concurrent testimony of every labourer in the harvest-field leaves no cause to doubt; the general opinion, gleaned on numerous and minute inquiries, I find to be that the irritating effects of the plant are caused by the seed when ripe, and are mostly manifested in the lower extremities, from the close adhesion of the seed to that part by their rough surface, aided by the friction of the shoe causing first abrasion, afterwards active inflammation and even ulceration: I have been repeatedly assured by the peasantry that they have known men incapacitated for work and laid up from the injurious operation of this noxious weed for days together in harvest time; not one whom I have addressed but spoke feelingly on the subject, often from his own experience. To myself the odour of the bruised flowers is not unpleasant, nor am I sensible of any acrimonious property on continued handling the fresh plant, and, though others have experienced the opposite effect in a short time, I apprehend that long-continued contact with a moist heated surface is

* Of the etymology of the name *Morgin* I am quite ignorant, but there is a story current of a Sussex farmer, belonging to the old slovenly school of agriculturists, coming before the revising barrister to register himself as a voter for the county, who, on being questioned by that legal officer as to whether there existed any mortgage on his farm, unhesitatingly replied, "Why, no, sir, no great deal of *Margin* much, but a precious sight of *Charlock*!"

required to produce such a result with the generality of people. The flowers when chewed have a biting acrimony, which is of very short duration.

The total want of a border to the seed, the absence of paleæ towards the circumference of the disk or base of the elongated receptacle, and the sterile florets of the ray, constitute the genus *Maruta* of Cassini a very artificial one; and were the principle carried out of making new genera upon every slight deviation in structure we should soon have as many genera as species.

This is a common and introduced weed in most parts of N. America to which colonization has extended, where, however, it is by no means so troublesome and hurtful an intruder as with us. I have seen it growing as far South and West as Natchez and New Orleans.

XVI. *ACHILLEA*, Linn. Yarrow.

"*Pappus* 0. *Receptacle* flat, chaffy. *Involucre* ovate, imbricated. *Florets* of the ray 5—10, roundish or obcordate."—*Br. Fl.*

1. *A. Millefolium*, L. *Common Yarrow* or *Millfoil*. "Leaves deeply bipinnatifid, lobes incise, segments linear-acute, stems furrowed, scales of the involucre nearly glabrous."—*Br. Fl.* p. 245. *E. B.* t. 758.

β. Flowers rose-colour or deep red.

In meadows, pastures, on hedgebanks, by roadsides and borders of fields; everywhere. *Fl.* June—September. *Fr.* September, October. 2f.

β. Shore near E. Cowes Castle. This var., which is not unfrequent, is often to be seen in gardens.

Receptacle conical. *Paleæ* brownish, lanceolate, concave, torn at the summit and margins, glabrous. *Achenia* ash-gray, obovato-oblong, subtetragonous, much compressed, with a narrow flat margin, striato-rugose and glabrous.

2. *A. Ptarmica*, L. *Sneezewort Yarrow*. *Goose-tongue*. "Leaves shining glabrous linear-lanceolate acuminate uniformly and sharply serrate, serratures appressed scabrous at the margin, ray 8—12 flowered."—*Br. Fl.* p. 244. *E. B.* t. 758.

In damp meadows, pastures, heathy bushy places, moist margins of fields and ditches, &c., but not common. *Fl.* July—September. *Fr.* September, October. 2f.

E. Med.—Smallgain's heath.

W. Med.—In and along the edge of Parkhurst forest, by the roadside from Newport to Yarmouth, very plentifully, as well as in the plantations on the enclosures. Field by the roadside from Yarmouth to Shalfleet, nearly opposite to Cranmore farm. Borders of fields between Cranmore farm and the road to Ningwood. In the bog at Cockleton, sparingly. On a heath or common (Wilmington heath) on the East side of the Yar. By the roadside between Wootton and Newport, a little beyond the bridge across the road. Alvington manor-land, *G. Kirkpatrick, Esq.* About the Depôt hospital, *B. T. W.*

Root jointed, creeping horizontally. *Stem* erect, slender, roundish, stiff, a foot or 18 inches high, a little downy towards the summit. *Leaves* sessile, linear, rigid, acute, sharply and evenly serrated, glabrous. *Panicle* terminal, corymbose, its branches downy. *Flowers* larger and fewer than in *A. Millefolium*, the disk grayish yellow, the ray white and broad. *Scales* of the involucre close-pressed, lanceolate, cottony, with a brown border. *Paleæ* broadly lanceolate, hairy at the tips. *Florets* all perfect; those of the ray with styles only.

The bruised flowers have a pungent aromatic scent, though the rest of the herb is nearly inodorous. The ray is deflexed, at night or when the plant is gathered, as in *Anthemis*.

†† Receptacle naked or hairy. *Synanthera discoid.*

XVII. TANACETUM, Linn. Tansy.

"Achenes angled, crowned with a large epigynous disk and a membranous margin. Receptacle naked. Involucre hemispherical, imbricated. Ligulate florets short and trifid, or wanting. (Heads homochromous)."—Br. Fl.

1. *T. vulgare*, L. Common Tansy. "Leaves bipinnatifid inciso-serrate."—Br. Fl. p. 229. E. B. t. 1229.

In dry hilly pastures, on hedgebanks, by roadsides and borders of fields; not very common. Fl. July?—September. Fr. September, October. 24.

E. Med.—At St. John's Ryde, sparingly. Near Lake farm, by Sandown. Hedge between Lake and Blackpan. By Bembridge, in the walk under the shore. Plentiful in the lane from Whitecross to Hilliard's. In a pasture-field close to Newchurch, at the S. end of the village, in great plenty. In some meadows at Newchurch, a little S.E. of the church, in great abundance. In a field about a quarter of a mile S.W. of Godshill church. Field opposite Holmwood, near Ryde, Miss Ferguson.

W. Med.—Plentiful by the roadside from Chale to Blackgang, and abundantly on a high bank by the roadside between Mottiston and Brixton. At Moor Town, Brixton. At Kingston near the church, and by Beckfield barn, commonly. Bank above the road between Calbourne and Newbridge, near the latter.

Root long, tough, stringy, creeping horizontally, with many lateral fibres. Stem erect, 1—3 feet high, solid, leafy, round, furrowed, brownish purple, branching at the top, usually bare below from the decaying of the lowermost leaves. Leaves alternate, bright green, sessile, bipinnatifid, the segments acutely inciso-serrate, glabrous, sprinkled thickly with resinous dots, in which the strong odour of the plant resides. Corymbs terminal, cymose, of many erect leafy branches, and bearing golden yellow flowers as broad as a silver penny. Involucre hemispherical, its scales unequal, ovate-obtuse, close-pressed, with a brownish keel and torn membranous edges. Receptacle hemispherical, quite smooth and naked. Florets very numerous, those of the circumference often 3-cleft and unisexual; sometimes all the florets 5-cleft and androgynous like those of the disk. Segments of the corolla thickened at the tips. Style cleft, with grooved reflexed segments. Achenium greenish, oblong, truncate, with 4 or 5 prominent rib-like angles, the faces plane or with an intermediate costa, often sprinkled with a few resinous grains, glabrous. Pappus none, but a short, membranous, uneven border at the truncate summit of the seed. Receptacle (in seed) broadly conical, solid, covered with raised points of attachment for the seeds, not alveolate.

DIOTIS, Desfont. Cotton-weed.

? 1. *D. maritima*, Cass. Sea-side Cotton-weed. Br. Fl. p. 228. Santolina, L.: E. B. t. 141.

On sandy sea-shores; now at least extinct. Fl. August, September. 24.

W. Med.—Shore at Sconce Tower, Mr. W. D. Snooke.

I insert this curious plant solely on the authority of the compiler of the 'Botany of the Isle of Wight,' having never met with it here or elsewhere in the island myself, or heard of any one besides who had. Though inclined to suspect an error in this instance, I have so repeatedly confirmed the accuracy of Mr. Snooke's stations, that I retain the species under a line, with a few other doubtful and extinct plants, merely observing that the assigned *habitat*, as it now exists, is not

XVIII. ARTEMISIA, Linn. Wormwood. Mugwort.

"*Achenes* obovate, with a minute epigynous disk. *Pappus* 0. *Receptacle* without scales. *Involucre* ovate or rounded, imbricated. *Ligulate florets*, if any, in a single row, short or slender and awl-shaped. (Heads *homochromous*)."—*Br. Fl.*

* *Receptacle hairy.*

1. *A. Absinthium*, L. *Common Wormwood*. "Leaves bipinnatifid clothed with short silky down, segments lanceolate, heads hemispherical drooping many-flowered, outer scales of the involucre linear silky, inner ones roundish scarious."—*Br. Fl.* p. 229. *E. B.* t. 1230.

On hedgebanks, by roadsides, and in dry waste places about villages, farmyards, &c.; frequent. *Fl.* August, September. 24.

Whole herb conspicuous for its silvery gray or hoary aspect, proceeding from the copious, adpressed, centrally affixed pubescence. *Root* perennial, of several long, stout, flexuose, pale and branching fibres, fleshy externally, hard, woody and white in the centre. *Stem* 1 or more, erect or slightly ascending, from about 2 to 4 feet high, terete, in the larger and older plants of a ligneous texture below, and covered with a brownish and roughish bark, whitish, furrowed, angulato-striate, zigzag and more herbaceous above, where it is filled with a beautiful cellular tissue, copiously and virgately branched; the branches very long, leafy, erect or patent, and like the main stem hoary with fine, close, adpressed, silky hairs fixed by their centres. *Leaves* alternate, sericeo-tomentose, very hoary beneath with the same matted and medifixed pubescence as the stem, less so and often considerably green above, the *lowermost* and those of the first year's shoots on long channelled petioles, bipinnato-pinnatifid or pinnatisect, roundish or ovate in outline, their primary segments deeply, unequally and for the most part trifidly pinnatisect; the ulterior segments mostly oblong or elliptical, pointed or obtuse, quite entire, flat; *stem-leaves* on shorter stalks, their segments longer, narrower and more acute, becoming gradually less compound as they ascend, the superior ones at length trifid, the highest of all linear-elliptical and undivided. *Heads* of flowers small, hemispherical, nodding or unilateral, mostly solitary or in pairs from the bosom of the upper leaves, or of a linear-oblong bract, in erect, leafy, alternate, simple or somewhat compounded racemes along the stem and branches, constituting in the aggregate a large, virgate, bushy panicle. *Peduncles* unequal, that of the outermost head in each pair extremely short, of the inner twice or thrice that length and often bracteate near its summit. *Involucral bracts* closely imbricated; the outer few sublinear-obtuse, very downy; inner roundish, gibbous and greenish at the back, with broad, scarious, pale brown, fringed margins. *Florets* numerous in each head, yellow or reddish. *Achenes* minute, grayish brown, oblong-obovate or obconic, subdiaphanous, strongly wrinkled. *Receptacle* convex, covered with pelucid, white, setaceous and membranous paleæ.

exactly one in which I should expect to meet with a plant delighting in loose sand or pebbles, but that the continual alteration which the shores of the island are undergoing, from landslips and the encroachments of the sea, may adequately account for the disappearance of the Sea Cotton-weed with the changes wrought in the locality.

** *Receptacle naked.*

2. *A. vulgaris*, L. *Mugwort*. "Leaves pinnatifid white and woolly beneath, heads somewhat racemed ovate, scales of the involucre woolly."—*Br. Fl.* p. 229. *E. B.* t. 1230.

Very common almost everywhere on dry hedgebanks, in waste ground and borders of fields. *Fl.* August, September. 24.

3. *A. maritima*, L. *Sea Wormwood*. "Leaves downy, radical and lower cauline ones bipinnate, upper often pinnate or pinnatifid, segments linear, heads racemed oblong 3—5 flowered."—*Br. Fl.* p. 229. *E. B.* xxiv. t. 1706.

"*α. Racemes drooping.*"—*Br. Fl.* p. 229. *E. B.* xxiv. t. 1706.

"*β. Racemes erect.*"—*Br. Fl.* p. 229. *A. gallica*, L.: *E. B.* xiv. t. 1001. *Fl. Dan.* xii. t. 2119 (bona).

In muddy places and on ditchbanks by the sea-shore, and in salt-marshes, borders of tide-rivers and creeks; here and there abundantly. *Fl.* August, September. 24.

E. Med.—Abundant near the sluice at the bottom of Brading harbour. Shores of Brading harbour here and there, as about St. Helens, Carpenters, &c. On the shore near Quarr, sparingly. King's quay. Salt-marshes by the Yar, near E. Cowes, *B. T. W.*

W. Med.—Abundant in salt-marshes around Newtown, especially on the point by the preventive station at Elmsworth Saltern, with var. *β.* Thorness bay, and in salt-marshes near Yarmouth.

Root tough, woody and flexuose, usually but little branched, running deeply and mostly obliquely, covered with a blackish brown wrinkled bark, dividing at the crown into several *stems*, which are tortuous, recumbent, spreading and somewhat ligneous below, then erect or ascending, slender, sharply angular, copiously branched and leafy, seldom much above a foot in height, clothed, as well as the leaves, with an abundant, close, cottony web less plentiful at the base of the stem, which is usually beset with the withered leaves of the previous year, or naked and of a greenish or yellowish brown colour, and glabrous or nearly so. *Leaves* numerous, alternate, very white or hoary, especially those of the barren shoots, which are crowded into dense tufts; on moderately long grooved petioles, small and of a roundish or oblong shape, deeply pinnatifid or pinnatisect, the secondary segments linear-oblong, entire, rounded or obtuse, either spreading or erect and folded together, flat above and somewhat keeled beneath, rather thick and succulent, those of the stem-leaves becoming for the most part less numerous as they approach the summit. *Heads* mostly 5-flowered, oblong, small, secund, nodding or drooping, sometimes erect (*A. gallica*, L.), mostly solitary and distant, in more or less unilateral, axillary, leafy, simple or slightly compound racemes, of which the inferior are long, spreading or patent, drooping at the tips, the superior short and strongly recurved, with closer-placed heads. *Florets* all perfect, yellowish or reddish, glabrous, resinous, the limb cleft at the summit into 5 short, erect, triangular segments; tube greenish. *Anthems* apiculate. *Styles* exerted, very thick, cleft into 2 rectangular, slightly diverging, yellow lobes with deflexed margins; *stigmas* disciform, semicircular, fringed with pellucid bristles. *Receptacle* minute, prominent and naked.

The smallest and latest in flowering of our British species, as well as the most aromatic, the odour of the fresh herb being equally pungent and agreeable with that of Southernwood (*A. Abrotanum*).

? 4. *A. cærulescens*, L. *Bluish- or Lavender-leaved Mugwort*. "Leaves hoary most of them lanceolate undivided tapering at the base, lower ones variously lobed, heads 3-flowered oblong-cylindrical spicate, scales of the involucre hoary subcarinate."—*Br. Fl.* p. 230. *E. B. t.* 2426. *Gerarde, Em.* p. 1104, fig. 8. *A. marina, Huds. : Fl. Angl. ed.* 2da, p. 359.

On the sea-coast; a very doubtful native. *Fl.* August, September. 2f.

On the coast of Brading harbour, near Bradstone, *B. T. W.*, but where I have sought it without success.

This species has been introduced into the British Flora on the authority of Gerarde and of Tofield, but, although the old herbalist mentions it as a native of the opposite coast of Hampshire (Portsmouth), he does not, as Sir J. Smith would lead us to suppose, tell us of its actually growing in the Isle of Wight, an error which seems to have originated with Smith, and from him to have been copied into our late British Floras. Yet in Mr. Snooke's little work above quoted a specific locality is assigned to *A. cærulescens* within the island, for the origin of which I am unable to account, not finding it recorded in any other book, nor is any authority subjoined for its insertion. It is not therefore unfair to presume, that supposing Gerarde and Tofield to have really found this now apparently extinct species, yet, as careful search has been instituted by succeeding botanists for its re-discovery, without success, in our own time, the probability is that the station I now give is erroneous, some form of *A. maritima*, possibly the var. *gallica*, having been mistaken for it.

††† *Receptacle paleaceous. Pappus of 2—5 stiff bristles.*

XIX. *BIDENS*, Linn. Bur Marigold.

"*Pappus* of 2—5 persistent awns, which are rough with minute deflexed prickles. *Receptacle* chaffy. *Involucre* of many scales; the outer ones or bracteas often leafy. (Heads *sometimes with a neuter ray*)."—*Br. Fl.*

The species of this genus are very widely dispersed over the globe.*

1. *B. cernua*, L. *Nodding Bur Marigold*. "Flowers drooping, bracteas lanceolate entire (longer than the involucre), leaves lanceolate serrated undivided, bristles of the fruit about 3 erect."—*Br. Fl.* p. 228. *E. B. t.* 1114.

β. Much smaller, stem simple. *B. minima*, L. : *Fl. Dan.* ii. t. 312; *Dill. in Ray's Syn.*

In and about shallow ditches, drains, ponds and other watery places. *Fl.* July—September. *Fr.* October, November. ☉.

E. Med.—Plentiful in ditches on Sandown level, especially about the skirts of Lake common. Abundant in a ditch behind Merry Garden, near Shanklin. Alverstton, in the wet ditches below the lynch. Plentiful in the drains of the wet meadow by the West side of Langbridge. In the stream by Budbridge, and elsewhere to the N. and N.E. of Godshill.

W. Med.—Wet places about Brixton, as at White-Court farm, &c. Common

* I observed a discoid *Bidens* very common in moist pastures and by roadsides in the lowlands of Trinidad and other West-India islands. *B. chrysantha*, with white radiate flowers, is a troublesome weed in the cane-pieces of Jamaica, the foreign species of the genus appearing less aquatic than our own.

along the Medina in several parts of its course, as about Cridmore, Rookley, &c., and in ditches and drains adjoining. In the farmyard at Sheat, near Gatcombe.

β. In a wet bog on the moors a little N.E. of Godshill and nearly opposite Moor farm. In my specimens the flowers are both erect and slightly nodding.

Achenia of a deep wood-brown colour or somewhat greenish, cuneate-oblong, truncate at the summit and at the much attenuated lower extremity, tetragonous, much compressed, with raised retrorsely aculeate angles (sometimes smooth, *Sm.*), the intermediate faces wrinkled and finely striate longitudinally. *Pappus* of 4 straight, nearly erect, bristle-like awns, one from each angle, and armed like them with very sharp, scarcely curved, retrorse prickles, about half as long as the fruit, the two middle awns rather shorter than the exterior pair, one of them often wanting.

The leaves, as well as the stems, are of a paler green than in the next.

2. *B. tripartita*, L. *Trifid-leaved Bur Marigold*. "Leaves tripartite, leaflets lanceolate deeply serrated, bristles of the fruit 2—3."—*Br. Fl.* p. 228. *E. B. t.* 1113.

In similar places with the preceding, but I think rather less frequent. *Fl.* July—September. *Fr.* October. ☉.

E. Med.—In various parts of Sandown level. Ditch by Merry Garden. Margin of the pond at Hardingshoot farm. Abundant in drains and ditches about Blackpan and Ninham.

Achenia the size of the last and very similar, but darker brown and still flatter, sublinear-oblong or obovate-oblong, truncate at both ends, with smoother faces, the outer angles fringed with closer and somewhat larger deflexed prickles. *Pappus* of 2 or oftener 3 bristly awns, in length and direction like those of the last, but rather more closely aculeate, with more slender prickles, the middle awn, as in that, shortest.

Suborder II. *CYNAROCEPHALÆ*.

All the corollas tubular, 5-cleft, and generally inflated below the mouth, uniform in the same head (perfect or rarely diœcious), or, as in Centaurea, with those of the circumference irregular, tubular and neuter. Style swollen below its branches.

* "*Pappus* in 1—2 rows, not surrounded by an elevated margin."—Bab. Man.

XX. *CARLINA*, Linn. Carline Thistle.

"*Achenes* oblong, cylindrical, silky. *Pappus* feathery, sessile, hairs unequally united at the base. *Receptacle* chaffy, scales irregularly cleft. *Involucre* imbricated, tumid; the outer scales lax, with numerous spines; the inner coloured, spreading, resembling a ray. *Anthems* with ciliated bristles at the base, and long appendages at the apex."—*Br. Fl.*

1. *C. vulgaris*, L. *Common Carline Thistle*. Stem mostly corymbose many-flowered (or simple and single-flowered) cottony, leaves unequally spinous and sinuate tomentose beneath. *Br. Fl.* p. 224. *E. B. t.* 1144.

On dry, hilly, sandy or heathy pastures, fields and rough rocky waste places; very common. *Fl.* June—August. ♂.

E. Med.—Abundant in Luccombe landslip, and in many parts of the Under-cliff. [On Bembridge down and St. Helen's spit, *Dr. Bell-Salter*, Edrs.]

W. Med.—About Blackgang, and on St. Catherine's down, plentiful.

Root very long, tapering, with few fibres, tough, woody, and covered with a thick soft bark. *Stem* solitary erect, 10—20 inches high, roundish, furrowed, leafy, purplish, and covered with a loose cottony web, either simple and having a solitary flower, or branched in a corymbose manner and bearing three or many more flowers, one at the end of each branch. *Leaves* alternate, sessile, slightly decurrent and recurved, lanceolate or linear-lanceolate, folded, irregularly waved and sinuate, covered, but mostly so on the under side, with the same cottony plexus as the stem itself, sometimes, it is said, smooth, gradually diminishing in length towards the summit of the stem, where they are very short, their margins armed with pungent but rather weak, partly spreading and partly erect spines. *Flowers* terminal. *Involucre* subglobose, cottony, its outermost scales or leaflets like the leaves, and spreading; then follow several rows of purplish brown, slender, compound, yellow-tipped spines, which are succeeded by a row or two of linear, acute and shining, chaffy scales, of a straw-yellow colour, spreading like rays when the flowers open. *Receptacle* spongy, beset with white, concave, chaffy paleæ, torn or cleft into several bristle-like laciniae.

** "*Pappus* in many rows, not surrounded by a prominent margin."—*Bab. Man.*

XXI. ARCTIUM, *Linn.* Burdock.

Fruit 4-sided. *Pappus* short, pilose. *Receptacle* chaffy. *Involucre* globose, the scales with an incurved hook at the point.

1. *A. Lappa*, *L.* *Common Burdock*. "Leaves cordate stalked."—*Br. Fl.* p. 219. *E. B.* t. 1228.

β. *Involucre* with a cobweb-like down. *A. Bardana*, *Willd.*: *E. B.* t. 2478.

In dry pastures, borders of fields, on waste ground, by waysides, along hedges, ditchbanks, and amongst rubbish, &c.; very common. *Fl.* July, August. ♂.

β. Much the more frequent var. of the two.

XXII. CARDUUS, *Linn.* Thistle.

"*Involucre* imbricated, with simple, spinous, pointed scales. *Receptacle* with fimbriated scales. *Achenes* compressed, oblong, with a somewhat fleshy terminal *areola*. *Pappus* long, pilose or plumose, united into a ring at the base and deciduous."—*Br. Fl.*

* *Pappus* rough.

1. *C. nutans*, *L.* *Musk Thistle*. "Leaves decurrent sinuate spinous, heads hemispherical solitary drooping, scales of the involucre lanceolate, outer ones spreading."—*Br. Fl.* p. 220. *E. B.* t. 1112.

In dry waste ground, rough barren fields, pastures and fallows; plentiful in calcareous soils; abundant on the sides of our high downs and in chalk-pits. *Fl.* May—October. ♂. or (ex Sm.) ☉.

2. *C. acanthoides*, *L.* *Wetted Thistle*. "Leaves decurrent lanceolate sinuate pinnatifid spinous, heads globose nearly sessile solitary or aggregated, involucre scales linear-subulate erect or spreading."—*Br. Fl.* p. 220. *E. B.* t. 973. *Fl. Dan.* viii. t. 1341. *Jacq Fl. Aust.* iii. 28, t. 249. *C. crispus*, *L.*

In woods, thickets and on hedgebanks, also (though more rarely with us) in dry open waste places, fields and pastures, but not very generally dispersed over the island. *Fl.* June—October. ☉. ex Sm. &c. more probably ♂.

E. Med.—Near Ashey farm, by the footroad from thence to Nunwell and Braiding, in plenty. Arreton street. On a high wooded bank above the road between Shanklin and Bonchurch, in abundance. Near Lower Knighton. Near Cowes. In Knighton East copse. Abundantly on a sloping bank under the S. side of Arreton down, adjoining a copse.

W. Med.—Plentiful in the park at Swainston, in and skirting the high wood, &c.; also by the roadside between Swainston and Apes down.

Achenia wood-brown or palish, oblong, compressed, shining and glabrous, with a few filiform strigæ. *Pappus* dirty white.

The name of this species has no doubt been given it from the strong resemblance of the first year's root-leaves to those of the *Acanthus*.

3. *C. tenuiflorus*, Curt. *Slender-flowered Thistle*. "Leaves decurrent lanceolate sinuate spinous somewhat cottony beneath, heads nearly cylindrical aggregated sessile, involueral scales ovate-lanceolate attenuate erect."—*Br. Fl.* p. 221. *E. B.* t. 412. *Fl. Dan.* xii. t. 2058.

On hedge- and ditch-banks, in dry waste places, and on the high chalk-downs; abundantly in various parts of the island. *Fl.* May—August. ☉. (or ♂. *Hook*).

E. Med.—At St. Helens. Most abundantly below the rocks near Mirables, &c. [On Ashey down, by the roadside, *Dr. Bell-Salter*. At Bembridge, on the shore near the ferry, and on the down over the Culvers, *A. G. More, Esq.*, Edrs.]

W. Med.—On Afton down. At Blackgang. On the chalky downs in West Medina, in plenty, *B. T. W.* "Everywhere about Freshwater," *Dawson Turner, Esq.*, in ditto.

Well distinguished from *C. acanthoides* by the cylindrical, not globose, involucre, and by the scales of that part being dilated into an oval form at the base.

** *Pappus* feathery. *Cnicus*, Linn. Sm. *Cirsium*.

4. *C. lanceolatus*, L. *Spear Thistle*. "Leaves decurrent hispid pinnatifid their segments generally 2-lobed spreading spinous, involucre ovate tomentose their scales lanceolate spreading."—*E. B.* t. 107. *Cnicus*, Willd.: *Br. Fl.* p. 221.

A common and troublesome species everywhere in pastures, waste places, by roadsides, on ditch-banks, &c. *Fl.* June—November. ♂.

To none of the genus is the motto, "Nemo me impune lacessit," more applicable than to this species, from the extreme pungency of its long and formidable prickles.

5. *C. eriophorus*, L. *Woolly-headed Thistle*. "Leaves semi-amplexicaul not decurrent white and cottony beneath spinous-hairy above pinnatifid, lobes bifid alternate segments pointing upwards and downwards, involucre spherical woolly, the scales with a long reflexed spinous point."—*E. B.* t. 386. *Jacq. Fl. Aust.* ii. 45, t. 171. *Cnicus*, Willd.: *Br. Fl.* p. 222.

In dry, hilly, chalky or limestone pastures, but very local. *Fl.* July, August. ♂.

E. Med.—Between Lucombe and Bonchurch, as originally remarked by *Mr. J. Woods, jun.*, in Bot. Guide, and where, on the rough ground over which the path goes from Shanklin to Lucombe chine, as also on the steep banks towards the Bonchurch extremity of the landslip at East-end, it still grows in tolerable abundance. About Bonchurch and Ventnor here and there.

W. Med. — Plentiful on sloping copse-land at the upper part of the valley at Apes down. Fields under Buccombe down, on the E. side, nearly above Idlecombe, in some plenty.

The handsomest perhaps of all the British thistles. *Root* biennial. *Stem* stout, much branched, leafy, solid, angular, deeply furrowed, very woolly, about 3 feet high. *Leaves* alternate, very large, spreading, the lowermost often 2 feet long, dark green, sessile and semiamplexicaul, deeply pinnatifid, the segments remote, in pairs, the lowermost in each pair and the larger of the two pointing upwards, the other and smaller directed downwards and forwards, all elliptic-lanceolate, with inflexed edges and a single, strong, white midrib, very cottony beneath, and armed with a few slender marginal spines, and a very stout sharp terminal one, in addition to which the smaller deflexed segments have a basal pair of strong spines, productions like the rest of the central nerve or midrib of the leaf, of which the terminal segment is very long and pointed. *Flowers* solitary or two together at the end of the branches, bright purple, very handsome, guarded by the long erect tips of the highest leaves, which supply the place of bracts. *Involucre* nearly spherical, as large as a middling-sized orange, flattened at the base, of many rows of linear twice-curved scales, that are smooth and shining in their broader and lower, but covered with a dense cottony connecting web in their upper and contracted part, which is purplish, reflexed, and tipped with a pale spine. *Receptacle* thick, fleshy, a little villous, with very shallow alveoli. *Florets* very long, slender, curved, the tube white, limb purple, its segments linear, erect, with thick glandular tips. *Filaments* hairy in their upper part; *anthers* purple, awned at the base. *Style* long, white; *stigmas* simple, undivided. *Achenia* large, ovate, compressed, dark brown or grayish and mottled, obscurely ribbed, smooth and highly polished, crowned with an oblique circular rim and depression, surrounding a short cylindrical point. *Pappus* long, white, beautifully feathery, planted in the groove around the above point, which is closely embraced by the deep annular base of the pappus, that falls away from the ripe seed on the slightest touch.

6. *C. arvensis*, Curt. *Creeping-rooted Thistle*. *Way Thistle*. "Leaves spinous, heads diœcious by abortion, involucre ovate nearly glabrous its scales broadly lanceolate appressed terminating in a short spreading spine, root creeping." — *E. B. t.* 975. Cnicus, *Hoffm.*: *Br. Fl.* p. 222.

By roadsides, in rough waste places, fields, pastures and neglected gardens, far too abundantly; an execrable pest in damp cornfields and cultivated ground. *Fl.* July. 24.

7. *C. palustris*, L. *Marsh Thistle*. "Leaves decurrent scabrous pinnatifid spinous, involucre ovate clustered, their scales ovate-lanceolate mucronate appressed." — *E. B. t.* 974. Cnicus, *Willd.*: *Br. Fl.* p. 221.

β. Flowers white.

In moist meadows, pastures, woods and thickets, on ditch-banks, and in other damp or wet situations; plentifully. *Fl.* July. ♂.

β. Plentiful along the descent from Groves's hotel to Alum bay.

8. *C. Forsteri*, Ed. Cat. *Branching Bog Thistle*. "Leaves slightly decurrent pinnatifid spinous downy beneath, stem panicked hollow, involucre ovate rather cotony, outer scales spinous."* *E. Fl.* iii. p. 390.

* [Br. Fl. 4th ed. sb. nom. Cnicus F.—Edrs.]

In damp pastures and in boggy woods; extremely rare, and now pretty generally considered as a casual mule production betwixt *C. palustris* and *C. arvensis*. *Fl.* July, August. 24.

A single plant found by the *Rev. G. E. Smith* between the Needles hotel (Groves's) and Alum bay, with a dried portion of which he has since kindly presented me. The specimen, which I presume to be identical with the plant first noticed at Frant, near Tunbridge Wells, Mr. Smith considers, with reason, as a casual hybrid between *C. palustris* and *C. arvensis*.

9. *C. pratensis*, Huds. *Meadow Thistle*. "Leaves soft mostly radical, cauline ones sessile lanceolate waved at the edge or pilose above cottony beneath fringed with minute prickles, heads mostly solitary terminal globose slightly cobwebbed, scales lanceolate closely imbricated mucronate, root creeping." — *E. B.* t. 177. *Cnicus*, Willd. *Br. Fl.* p. 223. *Cirsium Anglicum*, Lam.

In low damp or boggy meadows, pastures, and in wet marshy woods and thickets, at or near the sea-level; never, I believe, at any elevation. *Fl.* May—July. *Fr.* July. 24.

E. Med. — In a field near Quarr abbey. In a field on the right hand of the way from the Fish-houses to the Ryde and Newport road, in some plenty. On Ashey common, amongst the furze. Boggy meadow not far from Stapler's farm, and abundant on and about Briddlesford heath. Moory ground by Pagham farm. Pasture near Little-town.

W. Med. — In the marsh at Freshwater gate, sparingly. In great abundance on a heath or common (Wilmington heath) on the eastern bank of the Yar, opposite Freshwater house. Plentiful in a large pasture-field between Freshwater mill and Beckett's copse. Bog at Cockleton, sparingly. Wood (Symington copse?) by Northwood church, in considerable abundance. Roadside between Tapnel and the finger-post at the meeting of the Freshwater and Yarmouth roads, *B. T. W.*

One of the handsomest of our native thistles, from 12 to 18 inches high, clothed all over with a cobweb-like down, thickest on the under side of the leaves. Leaves edged with weak innocuous prickles. Flowers solitary or two together, light purple and agreeably scented.

10. *C. acaulis*, L. *Dwarf Thistle*. Stem almost none or short, leaves nearly all radical glabrous lanceolate-oblong pinnatifid, lobes somewhat trifid spinous toothed, heads mostly solitary, involucre obovate-cylindrical glabrous, scales appressed acute scarcely mucronate, outer ones ovate, inner gradually longer. *E. B.* t. 161. *Cnicus*, Willd. *Br. Fl.* p. 223.

An abundant and rather troublesome plant in dry upland meadows and pastures; extremely common on the highest chalk downs. *Fl.* June—September. 24.

In pastures at Swainston I have found it with a stem several inches high.

XXIII. ONOPORDUM, Linn. Cotton Thistle.

Achenes 4-ribbed, glabrous. *Pappus* pilose, rough, sessile, united into a ring at the base and deciduous. *Receptacle* honey-combed. *Involucre* tumid, imbricated, the scales spreading and spinose. *Anthers* with subulate appendages at the apex, shortly caudate at the base.

? 1. *O. Acanthium*, L. *Common Cotton Thistle*. Scales of the involucre spreading subulate, leaves ovate-oblong sinuate and

spinous decurrent woolly on both sides. *Br. Fl.* p. 224. *E. B.* t. 977.

In dry waste places, by roadsides, on hedgebanks, rubbish and about houses; an extremely rare, if not now extinct, plant in this island, where it was perhaps not indigenous. *Fl.* July—September. ♂.

E. Med.—On Ryde Dover, sparingly, prior to 1842; since then completely extirpated by building.

W. Med.—A solitary plant in the middle of a clover-lay at Thorley, Sept. 1842, most likely brought there with the seed.

Stems 5 or 6 feet high (or in gardens, where both it and *O. illyricum* are cultivated, still taller), broadly winged with the decurrent edges of the very spinous leaves, which are downy on both sides, but most so beneath. *Flowers* large, solitary at the end of the branches. *Involucre* globose, of numerous lanceolate very pungent scales, green with yellowish tips, the upper ones nearly erect, the middle ones patent, lowermost reflexed, all connected by a cottony web. *Florets* purple, with very long and slender tubes, segments of the limb very deep and narrow. *Receptacle* fleshy, with very deep foveæ, the margins of which are membranous, jagged and prominent. *Achenia* obtusely 4- or 5-angled, their faces perfectly smooth and shining, without points or striæ. *Pappus* scarcely half the length of the florets, jointed, compressed, rough with bristly hairs pointing forwards.

A most formidably armed and gigantic thistle, said to be the true Scotch Thistle, though that honour is bestowed by others upon the scarcely less redoubtable, but more elegant *Silybum Marianum*.

*** "*Pappus in many rows. Filaments monadelphous.*"—*Bab. Man.*

XXIV. SILYBUM, *Gærtner*. *Silybum*.

"*Involucre* imbricated; *scales* leaf-like at the base, narrowed into a long spreading spinous point. *Receptacle* scaly. *Fruit* compressed, its terminal areola surrounded by a papillose ring. *Pappus* pilose, united into a ring at the base, deciduous."—*Bab.*

1. *S. marianum*, *Gærtn.* *Milk Thistle*. "Leaves sessile amplexicaul waved spinous the radical ones pinnatifid, scales of the involucre subfoliaceous recurved spinous at the margin."—*E. B.* t. 976. *Carduus*, *Sm.* *Br. Fl.* p. 221.

On dry hedge- and ditch-banks, by roadsides, amongst rubbish, and in waste ground at the outskirts of towns; more truly wild in woods, thickets and on our elevated downs; here and there abundant, though not very general. *Fl.* May—July. *Fr.* July. ☉.

E. Med.—Truly wild in several places along the Undercliff. Very luxuriant in the wooded dell between Ventnor and Bonchurch, not far from the pulpit-rock. Under the cliffs above the road near Mirables. Roadside near the Sandrock Dispensary. At the edge of the downs at the summit of the cliff above Wolverstone, near St. Lawrence, in considerable plenty. Rough ground at Niton. A single specimen observed at Bembridge in 1841. On the Dover, Ryde, a few plants occasionally; also in John street; now, I believe, extinct in the latter place.

Receptacle spongy, densely tufted with very long, white, setaceous, ribbed paleæ. *Achenia* mottled gray and brown, elliptical-oblong, compressed, glabrous, crowned with a yellow oblique border and a short truncate point, and having an obscure ridge or angle marked by a pale line down the centre of each face. *Pappus* deciduous, oblique, several times the length of the seed, white, rough and finely striated.

**** "*Pappus* in many rows of different lengths, inner row longest, surrounded by a margin."—Bab. Man.

XXV. SERRATULA, Linn. Saw-wort.

"*Achenes* obovate, compressed, glabrous. *Pappus* persistent, pilose, hairs filiform in several rows, of which the interior is the longest. *Receptacle* chaffy, the scales split into linear bristles. *Involucre* oblong, imbricated with straight unarmed scales. *Filaments* papillose; *anthers* with a short blunt appendage, ecaudate at the base."—Br. Fl.

1. *S. tinctoria*, L. *Common Saw-wort*. "Dioecious, leaves entire or pinnatifid, involucre scales glabrous or slightly connected with a cobweb-like down, outer ones ovate appressed, inner line coloured."—Br. Fl. p. 220. E. B. t. 38.

β. Flowers white, scales of the involucre not coloured.

In woods, thickets and dry, heathy, bushy places; common. Fl. July, August. Fr. September, October. 24.

E. Med.—In Quarr copse, Shore copse, Stroud wood, Firestone copse, and elsewhere about Ryde, in plenty. Woods at Wootton and Cowes.

W. Med.—Common in woods about Yarmouth, Newtown, Swainston, Rowledge, &c.

β. On a bank close to Whitwell.

Achenia brown, linear-oblong, slightly curved, compressed and angular, with several very slender ribs, glabrous. *Pappus* brownish white, sessile, rough with sharp erect denticulations, shorter than the florets, in several rows, the inner of which are longest.

The flowers and general aspect of the Saw-wort remind one of some species of *Centaurea*, for which it is sometimes mistaken by young botanists.

***** "*Pappus* in many rows of different lengths: second row longest, placed within the margin which surrounds the epigynous disk, rarely 0."—Bab. Man.

XXVI. CENTAUREA, Linn. Knapweed.

"*Achenes* compressed. *Pappus* pilose or scaly or none, rarely exceeding the achene in length. *Receptacle* bristly. *Involucre* imbricated. *Florets* of the disk perfect; of the circumference narrow, funnel-shaped, irregular, without stamens or pistil (neuter), longer those of the disk, and resembling a ray (sometimes wanting)."—Br. Fl.

† Scales of the involucre without spines.

1. *C. nigra*, L. *Black Knapweed*. "Involucral appendages ovate closely and deeply fringed with spreading capillary teeth, lower leaves angulato-dentate sublyrate, upper ones lanceolate, pappus of short linear unequal scales.

"α. Heads discoid.

"β. Heads rayed."—Br. Fl. 225. *C. nigrescens*, Willd. Curt. Br. Entom. v. t. 241.

Everywhere abundant in woods, thickets, pastures, hedges, waste ground and by roadsides. *Fl.* June—September. 24.

β. With α., and equally common in some parts of the chalk district. Very frequent in Undercliff, as about Ventnor and between Shanklin and Bonchurch. A single specimen with white flowers near Niton.

2. *C. Scabiosa*, L. *Greater Knapweed*. "Scales of the involucre appressed with a black pectinate margin, leaves roughish pinnatifid, segments lanceolate acute, pappus pilose about the length of the achene."—*Br. Fl.* p. 226. *E. B. t.* 56.

On dry pastures, banks, by roadsides, hedges and grassy borders of cornfields, and amongst the corn itself; very common, particularly on the chalk. *Fl.* July—September. 24.

Chalky fields above Sandown bay, with the heads of flowers flesh-coloured and the ray white, also in a field near Yarmouth. Near Westover, with white flowers. A very handsome variety, having the florets of the disk lilac and those of the ray white, was found by the *Rev. Wm. Thickers* close to St. Lawrence's church, in August, 1842!!!

Receptacle copiously beset with long, ribbed, very acute, white and narrow, chaffy paleæ. *Achenium* oblong, compressed and truncate, smooth and shining, the colour of horn, thinly beset with long, soft, white hairs. *Pappus* about the length of the seed, tawny or purplish, beautifully pectinato-plumose, the hairs very unequal.

3. *C. Cyanus*, L. *Corn Knapweed*. *Blue-bottle*. "Scales of the involucre appressed with a brown toothed margin, leaves linear-lanceolate entire, the lowermost toothed or pinnatifid, pappus pilose rather shorter than the achene."—*Br. Fl.* p. 226. *E. B. t.* 277.

In cultivated fields, amongst corn, clover, &c.; common. *Fl.* June—August. ☉.

†† *Scales of the involucre spinous.*

*4. *C. solstitialis*, L. *Yellow Star Thistle*. *St. Barnaby's Thistle*. "Scales of the involucre woolly palmato-spinose ending in a long slender spine, stem winged from the decurrent bases of the lanceolate unarmed entire leaves, radical ones lyrato-pinnatifid, heads terminal solitary."—*Br. Fl.* p. 226. *E. B. t.* 243.

In and about cultivated fields, hedges, roadsides and waste ground; very rare and probably accidental. *Fl.* July—September. ☉.

E. Med.—By the roadside in a newly broken-up field above Bonchurch, *Rev. G. E. Smith*!

I have specimens, kindly given me by Mr. Smith, from the above locality, but was unsuccessful in finding it there myself in 1837, where, according to my excellent friend, it grew, to all appearance wild, amongst *Artemisia* and other *Compositæ*. Usually considered as an imported species, but, being rarely abundant, and, like many other annuals, seldom continuing long in one spot, shifts its station within certain limits, or disappears entirely. The late Lady Blake informed me it was to be found most years about Barton and Rougham, in Suffolk, but scarcely in the same field for many successive seasons.

5. *C. Calcitrapa*, L. *Common Star Thistle*. "Scales of the involucre glabrous ending in a long broad strong canaliculate spine spinulose at its base, stem divaricated, leaves unequally pinnatifid spinuloso-dentate, heads lateral solitary sessile, pappus

none." — *Br. Fl.* p. 226. *E. B.* t. 125. *Fl. Dan.* xii. t. 1998 (bona).

In dry sandy, gravelly or chalky pastures, waste places and by roadsides, especially near the sea; extremely rare, and perhaps now extinct in the island. *Fl.* July—September. ☉.

E. Med. — With white blossoms, by the roadside between Niton and St. Lawrence, Sept. 1833, *Mrs. Dixon*.

I have seen no specimen from this station, which, as *Mrs. D.* has suggested, may have been destroyed by the improvement of the still very narrow road.

This species is not at all uncommon in the South-eastern counties of England, along the coast as well as inland, but does not extend into the W. of England. It is abundant on Portsdown near Nelson's monument, and in Jersey, where I have gathered it in plenty, but on the mainland of Britain I am not aware of any station further to the westward than the above Hampshire one. I have seen it most abundantly naturalized about Norfolk, in Virginia.

Suborder III. CICHORACEÆ.

All the florets ligulate and perfect. Styles not articulated.

* "*Receptacle without scales. Pappus 0.*"—*Bab. Man.*

XXVII. LAPSANA, Linn. Nipplewort.

"*Achene* compressed, striated. *Pappus* none, or a mere border. *Receptacle* naked. *Involucre* in a single row of erect scales, with small ones at the base."—*Br. Fl.*

1. *L. communis*, L. *Common Nipplewort*. "*Involucre* of the fruit angular, stem paniced, peduncles slender, leaves ovate or cordate petiolate angulate-dentate, pappus none."—*Br. Fl.* p. 218. *E. B.* t. 844.

In waste and cultivated ground, hedges, woods, &c., very common. *Fl.* June November. ☉.

Dr. Bell-Salter found a specimen of this plant between Norton and Adgeton, with a very close, erect, corymbose panicle, the flowers very numerous, with the rays imperfectly developed.

Achenia pale brownish or straw-yellow, about 2 lines in length, glabrous, elongate-obovate, slightly curved, finely, closely and evenly costate-sulcate, subcompressed and angled, with a ridge down the inner face. *Pappus* none. *Receptacle* naked, smooth, with very shallow circular areolæ.

** "*Receptacle without scales. Pappus like a crown of many entire broad scales.*"—*Bab. Man.*

XXVIII. CICHORIUM, Linn. Succory. Endive.

"*Achene* turbinate, striated. *Pappus* sessile, scaly, shorter than the fruit. *Receptacle* naked or slightly hairy. *Involucre* of 8 scales, surrounded by 5 smaller ones at the base. (Flowers blue)."—*Br. Fl.*

1. *C. Intybus*, L. *Wild Succory* or *Cichory*. *Wild Endive*. "Heads sessile axillary in pairs, lower leaves runcinate hispid on

the keel, upper ones amplexicaul oblong or lanceolate entire."—*Br. Fl.* p. 218. *E. B.* t. 539.

By roadsides, in waste places and cultivated ground, amongst corn, and on chalky or gravelly banks and pastures, but rather uncommon in this island. *Fl.* July—October. 24.

E. Med.—Fields near St. Lawrence, *G. S. Gibson, Esq.*, in *Phytol.* for Nov. 1843.

W. Med.—About the ascent of the hill leading up to Hampstead farm, in some plenty. By the roadside between Idlecombe and Roughborough farms, for nearly 100 yards. In a chalky hollow in a field behind, and nearly between Plash and Buccombe, many very large plants.

Achenium pale, short and truncate at the summit, deeply furrowed and angular. *Pappus* a single row of very short unequally broad and jagged scales.

Completely naturalized in the northern part of the United States and in Canada. I remarked it abundantly near Montreal and Quebec, as also in New England, particularly at Boston.

*** "*Receptacle scaly. Pappus feathery.*"—*Bab. Man.*

XXIX. HYPOCHÆRIS, Linn. Cat's-ear.

"*Achenes striated, often beaked. Pappus feathery. Receptacle chaffy. Involucre oblong, imbricated.*"—*Br. Fl.*

1. *H. radicata*, L. *Long-rooted Cat's-ear.* "Stem branched leafless glabrous, peduncles with small scales, involucre shorter than the florets, leaves runcinate obtuse scabrous."—*Br. Fl.* p. 203. *E. B.* t. 831.

β. Leaves glabrous and shining, somewhat fleshy.

In meadows, pastures and waste places, on banks and along hedges, &c.; very common; a troublesome weed on lawns and grass-plats. *Fl.* June—October. 24.

β. Common on the banks of debris in Sandown bay, between that village and Shanklin.

Involucre sometimes quite smooth, but most frequently hispid with erect whitish hairs or bristles. *Achenia* forming globose heads, which are scarcely larger than in *H. glabra*, exactly similar to those of that species in form, size, colour and sculpture, but all stipitate, on usually rather long stalks. *Pappus* dirty white, in several rows, smooth, or very slightly scabrous towards the top only. *Palea* and *receptacle* as in *H. glabra*.

From *Hypochæris radicata* both *Thrinchia hirta* and *Apargia hispida* may be at once known by the simple flower-stalks of the two latter, not branched as in *Hypochæris*, and which are destitute of scales; by the absence of *palea* or *chaff* on the *receptacle*; and by having a sessile *pappus*, not stipitate or elevated on a slender stalk, as is the case with our present plant. The glabrous, deeply lobed and often pinnatifid leaves will enable the young botanist to distinguish *Apargia autumnalis* from the present plant, to which it bears a strong resemblance in its branched flower-stalks, scaly, like the latter, beneath the glabrous involucre, but upon close examination will be found to differ materially in the absence of *palea* to the *receptacle*, and in the sessile *pappus*. The presence of the little conical tuft of cotton within the fistulose stem, near the *receptacle*, in *Apargia autumnalis*, is perhaps the most decisive character.

2. *H. glabra*, L. *Smooth Cat's-ear.* Nearly glabrous, involucre oblong regularly imbricated equalling the florets, achenes of the central florets beaked, stem branched somewhat leafy, radical leaves dentate-sinuate. *Br. Fl.* p. 203. *E. B.* viii. t. 575. *Fl. Dan.* iii. t. 424.

On dry sandy or gravelly heaths and pastures, also in cultivated fields (amongst turnips, &c.), on a similar soil; rare? *Fl.* June—October. ☉.

In a sandy turnip-field near Cliff farm, by the footpath to Apse and America, 1849.

Root annual, long, whitish, tapering, simple or with a few lateral fibres, full of a bitter milky juice, as is the whole plant. *Stems* several, in the larger and more luxuriant plants sometimes very numerous, from about 4 or 6 to 12 or 15 inches high, the central erect, the rest spreading, ascending or decumbent at base, somewhat glaucous, subterete, a little compressed and sulcate, angular, hollow in the centre, rigid, quite glabrous, flexuose, simple or most usually more or less branched from about the middle upwards, often in very gross specimens in a proliferous or subumbellate manner, the branches much waved, elongate, bearing each a solitary flower on their slightly and very gradually enlarged summits. *Leaves* bright green, almost wholly radical, numerous, spreading, the outermost lying flat on the ground, oblong-ligulate, obtuse and rounded at the end, variable in the mode and degree of division, mostly sinuate-runcinate or sinuate-dentate, with acute shallow teeth or lobes tipped with a minute callosity, occasionally more deeply cleft; margin of the leaves ciliated with short, distant, bristly hairs, of which a few are occasionally observable on the upper side of the leaves and along the midrib underneath, otherwise they are quite glabrous. *Flowers* (anthodia) erect, very small, scarcely half an inch in diameter, bright yellow verging upon orange. *Involucre* oblong and cylindrical in bud, enlarged, conical and dilated at base in and after flowering; involucrel bracts regularly imbricated, the inferior and outer not numerous, elliptical-oblong or ovate-elliptical, unequal, obtuse, much shorter than the narrow elongate-lanceolate inner ones, which are very little spreading at the tips; all erect in flower, much enlarged, becoming more acute and finally reflexed in seed, their margins (especially of the outer ones) coloured, ciliate-pubescent at their tips, otherwise glabrous, keeled. *Florets* pretty numerous, very little exceeding the inner involucrel bracts in length, minute, glabrous, the ray very broad, 5-toothed, tube very long, slender and membranaceous, scarcely at all cupped at the top as in most of this order, but preserving an almost cylindrical form, with an almost imperceptible enlargement upwards to the ray, at which part it is surrounded by a few long, yellow, jointed hairs. *Style* exserted, yellow and 2-cleft at summit, the lobes spreading or recurved. *Paleæ* as long as the pappus and involucrel bracts, membranaceous and diaphanous, linear-lanceolate, acuminate, with a very long, slender, green or purplish point, single-ribbed. *Achenes* forming a globular head about an inch in diameter, purplish brown, linear-elliptical, the point of insertion on the receptacle oblique, with a lateral tumid and shining gland or callosity, a little compressed, strongly many-ribbed and furrowed lengthwise, the ridges closely beset with minute, erect, spine-like denticulations increasing in size at the summit. Exterior row of seeds truncate or (rarely) beaked, those of the centre attenuated into a very slender scabrous beak about their own length. *Pappus* plumose, dirty white, few- (2- or 3-) rowed, scabrous, twice or thrice the length of the seeds, persistent: — in *H. radicata* the pappus is smooth, or very slightly rough towards the tip only, and many-rowed.

**** "*Receptacle without scales. Pappus feathery or on the exterior fruits scaly.*"—Bab. Man.

XXX. THRINACIA, Roth. Thrinacia.

"*Achenes* tapering into a beak, the outer ones enveloped by the leaves of the involucre. *Pappus* of the marginal florets forming a short scaly cup, of the rest long, feathery. *Receptacle* naked. *Involucre* imbricated."—Br. Fl.

1. *T. hirta*, Roth. *Hairy Thrinacia*. "*Leaves* lanceolate subsinuate-dentate somewhat hispid with frequently forked hairs,

scapes single-flowered ascending glabrous below."—*Br. Fl.* p. 203. Hedynois, *E. B.* t. 555.

β. Leaves glabrous, shining.

On pastures, heaths and gravelly banks, fallows, &c.; common. *Fl.* July, August. 24.

E. Med.—About Ryde, at Ninham. About Quarr abbey. Meadows near Apley, St. John's, &c.

β. On the short turf of Freshwater down, above Alum bay, &c., frequent. [On St. Helens spit, *A. G. More, Esq.*, Edrs.] A mere variety, of which the leaves are almost perfectly glabrous, shining, and firmer in texture than usual.

Root præmorse, emitting a bundle of strong yellowish fibres. *Leaves* radical, spreading all round, shorter than the scapes, linear or linear-lanceolate, sinuato-dentate, tapering at the base into a narrow winged petiole, rough on both sides with whitish hairs, forked at their summits and arising from small tubercles. *Scapes* several, single-flowered, ascending, rounded and leafless, enlarged upwards beneath the flowers, mostly though not always glabrous in their upper part, clothed on their lower with hairs like those on the leaves. *Flowers* golden yellow. *Scales* of the involucre much shorter than the rays, in a twofold series, the outer at the base of the inner and much shorter than them, close-pressed, unequal, placed alternately higher and lower; inner scales in a single row, numerous, lanceolate, acute, equal and greenish, both series either quite glabrous or hairy on their keels. *Rays*, especially of the outer florets, very broad, flat and 5-toothed, greenish at the back, where the teeth have a thickened, often notched projection, like that of *Apargia hispida*. *Receptacle* flat, naked, alveoli with ragged edges. *Achenia* oblong, tapering at both ends, those of the circumference smooth or faintly wrinkled, crowned with a deep, membranous, jagged cup or border, and mostly abortive; the inner beautifully ribbed and transversely striated with raised points. *Pappus* rough, feathery, sessile.

XXXI. LEONTODON, *Linn.* Hawkbit.

"*Involucre* subimbricated, exterior scales much smaller, in 1—3 rows. *Receptacle* punctured. *Fruit* uniform, slightly beaked. *Pappus* of all the fruit in two rows; outer setaceous, persistent; inner longer, feathery, dilated at the base."—*Bab. Man.*

1. *L. hispidum*, *L.* *Rough Hawkbit.* "Scape single-flowered, thickened upwards slightly hispid naked or with 1—2 minute scales, leaves runcinate hispid with forked hairs, flowers drooping in bud, involucre hairy."—*Br. Fl.* p. 202. *E. B.* t. 554. *Apargia* Hedynois, *Huds.*

In dry meadows, pastures, and on gravelly heaths, &c.; frequent. *Fl.* June—September. 24.

Root thick, fleshy, blackish and creeping, sending down many stout fibres having a tough central chord. *Leaves* all radical, pale green, long, narrow, somewhat pointed, rough all over with white forked hairs, deeply runcinate, the lobes triangular, lower ones pointing backwards, those near the summit of the leaf broader and shallower, variously cut or toothed in a waving manner. *Scapes* several, sometimes solitary, single-flowered, about a foot high, leafless, furrowed and angular, a little enlarging upwards below the flowers, and rough with spreading hairs like those on the leaves. *Involucral bracts* densely hispid, linear, blackish green, outer ones in a single row, much shorter than the inner, which are nearly equal and almost smooth at their tips with a slight downiness merely. *Flowers* rather large, above an inch across, golden yellow; *florets* all perfect, their rays much longer than the involucre, ribbed and truncate, the 5 teeth at their extremities thickened or glandular at the back. *Receptacle* somewhat hairy, flat, the alveoli

with raised jagged margins. *Pappus* a little longer than the tube, rough, feathery, jointed and sessile. *Achenium* angular, beautifully furrowed or wrinkled transversely.

XXXII. Oporinia, Don. Hawkbit.

"*Involucre* subimbricated, exterior scales much smaller, in several rows. *Receptacle* punctured. *Fruit* attenuated, uniform. *Pappus* of all the fruit in 1 row, feathery, dilated at the base."—*Bab. Man.*

1. *O. autumnalis*, Don. *Autumnal Hawkbit*. "Scape scaly upwards, leaves lanceolate toothed or pinnatifid nearly glabrous, peduncles swollen beneath the involucre."—*Br. Fl.* *Fl. Dan.* xii. t. 1996 (var. with deeply pinnatifid leaves). *Apargia*, *Br. Fl.* p. 202. *Hedypnois*, *E. B.* t. 830. *Oporinia*, *Don.*

β. Leaves hispid; calyx hairy; stems spreading, prostrate or ascending.

In meadows, pastures, and on dry banks, &c.; frequent. *Fl.* August. 24.

β. In a chalky cornfield above Sandown bay, near the Culver cliff.

XXXIII. Tragopogon, Linn. Goat's-beard.

"*Achenes* longitudinally striated, beaked. *Pappus* feathery. *Receptacle* naked. *Involucre* simple, of 8—10 scales united at the base."—*Br. Fl.*

1. *T. pratensis*, L. *Yellow Goat's-beard*. *Go-to-bed-at-noon*. "Glabrous, involucre about as long or twice as long as the corollas, leaves undivided acuminate from a dilated base channelled, peduncles slightly thickened at the very summit."—*Br. Fl.* p. 201. *E. B.* t. 434.

β. minor, Leight. "*Involucre* twice as long as the corollas."—*Br. Fl.* *T. minor*, *Fries.*

The var. *β.* only. In meadows, pastures, by waysides, borders of fields, woods, and along hedges; not uncommon. *Fl.* June, July. *Fr.* July, August. ♂.

E. Med.—By the footway over the fields from Shanklin to Cook's castle, and not uncommon in pastures between Shanklin and Appuldurcombe. [In hedges near Ryde, in several places, *Dr. Bell-Salter*, Edrs.]

W. Med.—In the Lenten Pit, Carisbrooke. A troublesome weed on the grass-plats at Thorley vicarage.

β. minor.* Plant quite smooth and glabrous in every part excepting the involucre and florets. Root whitish, brown externally, long, simple, tapering and flexile, fleshy and abounding in a viscid milky juice,† biennial? Stem 1 or several, firm, erect, wavy, usually about 2 or 2½ feet in height, the lateral ones ascending or sometimes even decumbent at base, rounded, leafy, striated, fistulose, pale green or partly streaked or clouded with purple, often forked, branched from or near the base; the branches erect or more or less forked, branched and flexuose like the stem itself. Leaves numerous, alternate, pale green and somewhat glaucous, sessile, those at the root and lower part of the stem marcescent, the larger a foot or upwards in length, those on the higher part of the stem and branches shorter, all

* [The author has described var. *β.* this form only being found in the island. —*Edrs.*]

† This juice, as well as the substance of the root itself, is without any bitterness of flavour in the wild plant.

very narrow-linear, quite entire, gradually tapering from an erect, short, clasping, ovate, many-ribbed base, into long finely acuminate points, which are deeply folded or complicate and acutely keeled, with a pale silvery midrib, flaccid, waved and twisted, erect, drooping or recurved, their dilated bases often edged with purple. *Bracts* none, or occasionally a solitary one a short distance below the involucre. *Heads* (synanthera) small, solitary and terminal on the stem and branches, on long, naked, cylindrical peduncles, which are thickened upwards rather suddenly for a short distance only below the involucre, the dilated portion somewhat furrowed and angular. *Involucres* ovate, much enlarged after flowering, strongly deflexed in seed; *involucral bracts* few, always? 8 (8—9, *Leight.*), lanceolate-acuminate, nearly flat, entire, in two rows united at base; outer row mostly glabrous, purple-edged, keeled at the back; inner row as long as the outer, partially covered behind with a blackish woolly pubescence and more strongly keeled, otherwise similar, in the variety now described nearly one-half longer than the florets. *Florets* rather numerous, with bright yellow oblong rays, which are slightly hairy at the back, truncate and 5-toothed, the points somewhat thickened and glandulose-pilose, inner florets gradually shorter as they approach the centre; *tube* white, cylindrical, very slender, yellowish and villous at top, embraced by the erect unequal pappus, which by the intermingling of its hairs is formed into a sort of tube below. *Anthers* dark purplish brown in the upper, deep yellow in the lower part, closely cohering. *Styles* finally much exerted, yellow, simple, at length revolute. *Receptacle* naked, plane. *Pappus* hairy, in the flower greenish, matted and unequal, having a few of its rays produced into long simple awns or bristles much longer than the tube of the floret, the rest about equal to the latter. *Achenes* $\frac{1}{2}$ an inch in length, yellowish or greenish brown, those of the marginal florets darker, slightly curved, scabrous along the angles with scale-like, and on the interstices with blunt tubercular or verrucose prominences, those of the interior florets paler, smoothish and nearly straight; all narrow-oblong, 5-angled grooved and striate, with a deep, oblique, mouthed, basal areola, tapering at top into a slender beak about the length of the achene; bearing on its slightly enlarged apex a minute, circular, hairy disk, from which diverge the long, slender, brown and numerous rays of the widely spreading pappus, which is beautifully feathered with white, silky, implexed and simple hairs, forming in the aggregate a spherical head between 3 and 4 inches in diameter. A few of the rays of the pappus (usually 4 or 5) exceed the rest in length, with rough naked points, as may best be seen in the unripe state or before they spread.

The flowers, as Smith remarks, are expanded about sunrise and close again before noon, hence one of its familiar names, except in dark cloudy weather, when they remain open for a much longer time.

†? 2. *T. porrifolius*, L. *Purple Goat's-beard*. "Involucre longer than the corollas, leaves undivided straight acuminate slightly dilated above the base, peduncles much thickened upwards."—*Br. Fl.* p. 201. *E. B.* t. 638. *Curt. Br. Entom.* ix. t. 433.

In meadows and pastures, on hedgebanks and waste ground, occasionally, but rare, and probably not indigenous. *Fl.* May, June. ♂.

E. Med.—At Sea-view, *Miss Theodore Price* !! Near Sandown, *Miss Lovell* !!! Amongst grass, Niton, *J. Curtis, Esq.*

XXXIV. PICRIS, Linn. *Picris*.

"*Achenes* transversely striated, with scarcely any beak. *Pappus* with the inner hairs feathery. *Receptacle* naked. *Involucre* of many compact, upright, equal scales, with several external small linear ones."—*Br. Fl.*

1. *P. hieracioides*, L. *Hawkweed*. *Picris*. "Stem rough with hooked bristles, leaves lanceolate rough toothed, flowers corym-

bose, peduncles with many bracteas, outer scales of the involucre linear-oblong lax bristly on the keel."—*Br. Fl.* p. 202. *E. B. t.* 196.

On banks, by roadsides, in waste ground, along hedges, borders of fields and woods; very common in various places, though not generally diffused over the island. *Fl.* June—October. 24.

E. Med.—Plentiful along the road from Shanklin to Bonchurch, and in Luccombe chine and East-end. Common in the Undercliff, about Ventnor, Steep-hill, St. Lawrence, &c. Frequent at Arreton. Chalk-pit between Brading and Yaverland. Under Ashey down, and at the S. end of Brading. Frequent in fields and hedges under the S. side of Brading down, between Morton and Adge-ton; and on Morton shoot. Osborne wood, in plenty, *Miss G. Kilderbee*.

W. Med.—Near Weston farm, Freshwater. Shore near Egypt. Abundant on a ledge of the Freshwater cliffs, of about an acre in extent, called by the cliffsmen Rosehall Green. Plentiful at the entrance of Shorwell (from Newport), and elsewhere occasionally in that neighbourhood. In the valley between Apes down and Rowledge. Long Bench, *Rev. G. E. Smith*.

XXXV. HELMINTHIA, *Juss.* Ox-tongue.

"*Achenes* transversely striated, beaked. *Pappus* feathery. *Receptacle* naked. *Involucre* double; inner of 8—10 close scales; outer of 3—5 shorter, lax, leafy ones."—*Br. Fl.*

1. *H. echioides*, Gærtn. *Bristly Ox-tongue*. "Outer scales of the involucre 5 cordate crenate, stem erect hispid."—*Br. Fl.* p. 201. *Picris, L. : E. B. t.* 972.

A far more general plant than the last, occurring abundantly and often profusely on chalk and clay, over the greater part of the island, in woods and waste places, by roadsides, on hedge- and ditch-banks, the borders of fields, &c. *Fl.* June—October. 24.

E. Med.—About Ryde, almost everywhere, as at Binstead, &c. Most abundantly in the large copse at the West side of the mouth of the Wootton river, growing even in very wet parts.

W. Med.—Abundant in woods (on chalk) at Swainston, and in the Tolt copse, near Gatcombe. About Yarmouth, plentifully.

A handsome plant, of a full green colour. *Root* tapering, milky. *Stem* 2—5 feet high, erect, rounded, striated, branched, very rough with stiff hairs or bristles springing from tubercles, and which are found copiously clothing the leaves and other parts. *Leaves* lanceolate, the lower ones on long petioles, those of the stem semiamplexicaul, partly decurrent, with very broad, rounded, often unequal bases, their surface covered with very prominent bristle-bearing papillæ, hollow beneath. *Flowers* solitary, or in clusters of 3 or 4 together at the end of the very irregularly forked branches, about an inch broad, of a golden yellow, fully expanding in bright weather only, and closing early in the afternoon. *Involucral scales* in two rows, the inner 8, close, lanceolate-acute, shorter than the florets, each with an awl-shaped fringed appendage a little below the summit, and reaching beyond it to the tips of the florets; the outer of about 12 very short, unequal, linear and close-pressed scales at the base of the inner; both surrounded by an involucre of 5 broad, heart-shaped, concave and nearly equal leaves. *Florets* all perfect, tube of the corolla very hairy at the top. *Receptacle* downy. *Seed* reddish, a little gibbous on one side and compressed, covered with transverse raised lines or ridges running irregularly in a serpentine or vermiform manner; *beak* very long and slender.

The resemblance of the rough hispid leaves and stem in our present plant to the same parts in the common Viper's Bugloss (*Echium vulgare*) has suggested the specific name. Though abundant in the S. of England, it is by no means

general either in Britain or on the Continent. It constitutes an excellent genus apart from *Picris*, from whence it was removed by Vaillant, but imperfectly reunited to it by Linnæus, and again separated by Jacquin. *Picris* differs less from *Hieracium* than it does from *Helminthia*.

I am informed by Mr. Rawkins, late of Hardingshute farm, that sheep are very partial to the early radical herbage of this very rough plant, which in that neighbourhood at least is known under the very incorrect name of Borage.

***** "*Receptacle generally without scales. Pappus filiform, very soft, deciduous, never feathery nor dilated at the base, silvery.*"—Bab. Man.

XXXVI. TARAXACUM, Haller. Dandelion.

"*Heads many-flowered. Involucre double, inner of one row, erect; outer of few short lax or adpressed imbricated scales. Fruit subcompressed, muricated and suddenly contracted above, produced into a filiform beak.*"—Bab. Man.

1. *T. officinale*, Wigg. *Common Dandelion*. "*Leaves runcinate toothed.*"

"*α. Outer scales of the involucre reflexed.*"—Br. Fl. p. 208. *Leontodon Taraxacum*, L. E. B. t. 510.

β. Scales of the involucre appressed, erect. *L. palustre*, Sm. Br. Fl. iii. p. 350. E. B. t. 553.

γ. Leaves finely and deeply pinnatifid, scales of the involucre close-pressed, plant very diminutive. *L. lævigatum*? DC.

In meadows, pastures, waste and cultivated ground, on hedgebanks, grass-plats, &c.; abundantly. Fl. Spring and summer, and more partially the year through. 24.

β. Marshy places near Ryde, Dr. Bell-Salter !!!

γ. On dry chalky downs. Ashey down, frequent, Dr. Bell-Salter.

The var. β., thought by Sir James Smith to be a distinct species, differs in having the leaves less deeply runcinate, narrower, with more distant, less regular and rather sinuate lobes, and by the scales of the involucre being erect or close-pressed, though in the fresh specimens before me these scales are both patent and deflexed on the same flower, proving the inconstancy of this character.

XXXVII. CREPIS, Linn. Hawk's-beard.

"*Heads many-flowered. Involucre double; inner of one row; outer of short lax scales. Fruit terete, narrowed upwards or beaked.*"—Bab. Man.

1. *C. virens*, L. *Smooth Hawk's-beard*. "*Leaves glabrous runcinate or pinnatifid, the upper ones linear sagittate amplexicaul, the margins plane remotely toothed, stem glabrous, panicle subcorymbose, outer involucre scales appressed linear, inner ones glabrous within, fruit oblong slightly attenuated upwards with smooth ribs shorter than the pappus.*"—Br. Fl. p. 206. *C. tectorum*, E. B. t. 1111.

In dry pastures, fields, waste and cultivated ground, on walls, roofs and banks, &c.; everywhere abundantly. Fl. June—September. ☉.

* 2. *C. setosa*, Hall. "*Leaves runcinate dentate or lyrate-runcinate, stem-leaves sagittate entire or inciso-dentate below, heads erect, involucre about covering the pappus, margin of the outer*"

lanceolate acute scales and the bracts of the inner scales and the peduncle hispid with rigid simple bristles."—*Bab. Man.*

In cultivated fields, chiefly with clover or lucerne; rare, and certainly introduced. ☉.

E. Med.—In a clover-field at Wootton, between the Newport road and the new cut to Cowes, in abundance, 1846, *Dr. Bell-Salter.*

W. Med.—In a clover-field near Gurnet farm, sparingly, 1845; no doubt introduced with clover-seed from the Continent, in the southern and eastern (Silesia) parts of which only it appears to be truly native, *Dr. Bell-Salter !!!*

XXXVIII. SONCHUS, Linn. Sow Thistle.

"*Achenes* much compressed, without a beak. *Pappus* pilose. *Receptacle* naked. *Involucre* imbricated, with 2—3 rows of unequal at length connivent scales, tumid at the base, few-flowered."—*Br. Fl.*

1. *S. oleraceus*, L. *Common Sow Thistle.* "Heads subumbellate, involucre glabrous, leaves undivided or pinnatifid toothed, lower ones stalked, upper ones lanceolate clasping the stem with spreading sagittate auricles, fruit longitudinally ribbed and transversely rugose."—*Br. Fl.* p. 205. *E. B.* t. 843.

In waste and cultivated places, garden-ground, about hedges, roadsides, in woods, fields, &c.; everywhere. *Fl.* June—October. ☉.

2. *S. asper*, Hoffm. *Sharp-fringed Annual Sow Thistle.* "Heads subumbellate, involucre glabrous, leaves undivided or pinnatifid deeply toothed all lanceolate clasping the stem with rounded auricles, stem branched, fruit longitudinally ribbed without transverse wrinkles."—*Br. Fl.* p. 206. *E. B. Suppl.* tt. 2765 and 2766.

In similar places with the last, and nearly as common. *Fl.* June—September. ☉.

Notwithstanding the opinion of many botanists of the first rank, we cannot help believing, with Mr. Borrer and numerous continental authors, that *S. asper* is truly distinct from *S. oleraceus*; our opinion being founded on the permanency of character in a part less liable to accidental variation, viz. the seed; nor would we reject the scarcely less immutable marks derived from the peculiarly curled or rounded auricles of the leaves, like the volutes on the chapter of a Corinthian or Ionic column, very different from the acute arrow-shaped bases of the leaves in *S. oleraceus*; nor the fact of the root-leaves of *S. asper* being winged to their junction with the stem.

3. *S. arvensis*, L. *Corn Sow Thistle.* "Heads corymbose, peduncles and involucre glandulose-hispid, leaves denticulate clasping the stem with short obtuse auricles, lower ones sinuate-runcinate, upper ones oblong-lanceolate entire, stem simple, root with creeping scions."—*Br. Fl.* p. 205. *E. B.* t. 674.

In cultivated fields, amongst corn, &c., especially on a dampish soil. *Fl.* June—September. 4.

XXXIX. LACTUCA, Linn. Lettuce.

"Achenes much compressed, with a long beak. Pappus pilose. Receptacle naked. Involucre imbricated, cylindrical, few-flowered. its scales with a membranous margin."—*Br. Fl.*

1. *L. muralis*, DC. *Ivy-leaved Lettuce*. *Wall Lettuce*. "Florets 5, leaves lyrate-pinnatifid and toothed, the terminal lobe angled, panicle with divaricated branches, beak much shorter than the (black) achene."—*Br. Fl.* p. 205. *Prenanthes*, *L.*: *E. B.* t. 457.

On old walls, rocks, moist shady banks, woods and thickets, but not common. *Fl.* June—August. 4.

E. Med.—On the walls of Quarr abbey, but sparingly. In Church lane, Binstead, several plants. Rather plentiful under the garden-wall at Knighton house. Frequent under the rocks at Hatchet close and Cowpit-cliff woods, near Shanklin. In Bloodstone copse, in several places. [Side of a path leading from Brading to the down, *A. G. More, Esq.*, Edrs.]

W. Med.—Woods about Rowledge, and in Westover plantation, occasionally. On a bank by the roadside near Apes down, in some plenty. Copse near Buccombe down. Slucombe copse, a little W. of Roughborough. In some plenty in the little copse above Alvington marl-pit.

A slender, smooth, lutescent herb. Root short and fleshy, emitting several long slender fibres. Stem about 1—3 feet in height, mostly solitary, more rarely 2 or 3 from the same root, erect, leafy, round, smooth, slightly flexuose, simple, hollow or filled with white cellular tissue, green or purplish. Leaves alternate, rather remote, thin and membranous, flat, bright pale green, whitish or glaucous beneath, and often tinged with violet, strongly veined, lyrate-runcinate, lower ones on long winged petioles, those higher up broader, dilated, rounded and clasping at the base, the auricles toothed, acute and in the superior leaves almost sagittate, their points often deflexed; uppermost leaves sometimes oblong and nearly entire, the rest with acutely angular, sinuate and toothed lobes, the terminal one of which is very large, more or less distinctly trilobate and resembling an ivy-leaf in shape, its central division much produced, and like the lateral sharply angulato-dentate, mucronato-acuminate. Panicle terminal, of several alternate, patent or spreading, divaricately ramifying branches. Flowers small, erect, bright yellow, their pedicels with one or two small clasping bracts. Involucre slender, cylindrical, its outer scales very small, unequal, mostly 3, shaped like those on the pedicels and at the forks of the panicle; inner 5, nearly equal, linear-oblong, obtuse and ciliated at the summit, with pale membranous edges, scarcely keeled, blackish or purplish, green at the back, strongly reflexed in seed. Florets 5, the tube very slender, and hairy near the top; ray broad, ovate-truncate, 5-toothed and striate. Styles rough in their upper part, 2-cleft, the segments linear, revolute. Achenium obovato-oblong, much compressed, dark brown, roughish with very short minute pubescence, each face with several (5 or 6) obtuse ridges. Pappus single-rowed, snow-white, roughish, placed on a circular disk, which is downy on the margin and stipitate on the very short beak, which is scarcely $\frac{1}{4}$ th the length of the seed.

2. *L. virosa*, L. *Strong-scented Lettuce*. "Leaves patent oblong toothed or sinuated two-eared and amplexicaul at the base, flowers panicled, beak as long as the (black) achene."—*Br. Fl.* p. 204. *E. B.* t. 1957.

On hedgebanks, old walls, cliffs, and borders of fields, mostly on a chalky soil; very rare. *Fl.* July?—September. ♂.

E. Med.—On a hedgebank between Wroxall and Newchurch, 1844, *Miss Hadfield*!

***** "*Pappus rigid, brittle, at length brownish or yellowish. Otherwise like the preceding section.*"—Bab. Man.

XL. HIERACIUM, Linn. Hawkweed.

"*Achenes angular, furrowed, with an entire or toothed margin at the top without a beak. Pappus pilose, in one row, frequently brownish, persistent and brittle. Receptacle nearly naked, dotted. Involucre imbricated.*"—Br. Fl.

* *Stem resembling a scape or leafless.*

1. *H. Pilosella*, L. *Mouse-ear Hawkweed*. "*Leaves entire elliptic-lanceolate or lanceolate hairy with dense stellate down beneath, primary stem 1-headed leafless, involucre ovate at the base, inner scales acute and narrower than the outer ones.*"—Br. Fl. p. 209. E. B. t. 1093.

β. Scions short, leaves narrow-lanceolate, very white beneath with dense woolly tomentum, and shaggy on both sides with long silky hairs; involucre very villous; flowers large. *H. peleterianum*, Merat, *Nouv. Fl. des Env. de Paris*, p. 305?

On dry short pastures, heaths, banks, walls, rocks and waste barren places; very common. Fl. May—August. 2.

β. On the chalky cliffs near Freshwater gate, *Albert Hambrough, Esq.*, 1849 !!!

** *Stem more or less leafy.*

2. *H. vulgatum*, Fr. *Common Hawkweed*. "*Stem usually with several leaves branched upwards and subcorymbose or forked slightly hairy, leaves ovate-lanceolate toothed with the teeth pointing upwards somewhat hairy, radical ones stalked usually tapering into the petiole, cauline ones stalked or sessile, peduncles at the apex and the involucre with more or less stellate down mixed sometimes with black hairs or setæ, 'inner scales bluntish in bud incumbent upon and not longer than the florets,' ligules glabrous at the apex.*"—Br. Fl. p. 212. E. B. t. 2031.

In dry woods and thickets, on walls, banks and sandy, gravelly or chalky pastures; rather rare. Fl. June, July. 2.

E. Med.—In a sandy lane between Morton farm and the grove. In the road between Little Briddlesford and Woodhouse farm. Roadside just before coming to New copse, near Wootton bridge, *Dr. Bell-Salter !!!* I find it also in the gravel-pits nearly opposite the last station, in the angle of the road leading to Fishbourne. On Bordwood heath, and on a bank by the roadside going from thence towards Winston. Amongst the rocks at East-end. Plentiful in East-Standen copse, near Newport, mostly by the pathside through the wood. On Blackpan common, between Burnt-house and Lake.

W. Med.—In a copse (Symington copse) near Northwood church.

Herb slightly milky, and varying greatly in its aspect according to soil and situation. *Root* tapering, with numerous long, stout, pale fibres, according to Smith slightly creeping. *Stems* 1 or more, erect, 1—2 feet high (or in moist shady places even twice that height, with far larger leaves), round, solid, simple, striated, greenish or purplish, more or less leafy, rough with scattered, white, toothed hairs intermixed with fewer very short, blackish, almost aculeate ones, both most copious near the base. *Leaves* alternate, extremely inconstant in size, shape, number and degree of toothing, ovate-lanceolate, firm, pale green on the upper side, often

tinged with purple on the under, and in some varieties spotted and clouded with that colour above: the very lowest leaf or two in my specimens are angulato-dentate, very rough on the upper side with short, erect, tubercular hairs, and on sheathing petioles, those immediately succeeding more distinctly toothed, the rest or upper and middle stem-leaves strongly and sharply toothed, chiefly in their lower part, narrow-lanceolate, acute, waved, folded and nearly glabrous above, hairy beneath, their margins and tips of the teeth dark-coloured: the form, size and direction of the teeth are extremely variable, being sometimes remote, at other times approximate, mostly pointing forwards, a few only directed horizontally. *Flowers* large, bright almost golden yellow, 2, 3, or more together, terminating the long, erect, somewhat angular branches of the corymbose panicle, which, like the peduncles, are somewhat hoary with appressed starry pubescence. *Bracts* solitary at the forks of the branches, small, linear and pointed, the lowermost leafy and toothed. *Involucral scales* blackish green, erect, the innermost long linear paleæ; those exterior to them shorter, broader and darker, the outermost of all a little diverging from the erect position of the rest, and beneath these latter, on the enlarged summit of the peduncle, are a few scattered scales, like the others, but swollen or gibbous at the base; all alike beset with short, black, gland-tipped hairs and stellate pubescence intermixed. *Rays* of the florets deeply 5-toothed, very hairy at the back towards the base. *Style* and *stigmas* rough. *Receptacle* plane, foveæ numerous, with sharp jagged borders.

3. *H. murorum*, L. *Wall Hawkweed*. "Stem with about 1 leaf corymbose or forked, radical leaves numerous persistent stalked usually rounded or cordate at the base and there with radiating or reflexed teeth somewhat hairy, cauline ones sessile or stalked, peduncles and the involucre with white stellate down and usually black hairs or setæ, 'inner scales of the involucre cuspidate in bud straight and much longer than the florets,' ligules glabrous at the apex."—*Br. Fl.* p. 212. *E. B.* t. 2082.

Fl. June—August. 24.

I found, July, 1837, in a wood near Yarmouth, a specimen or two of a plant which appeared to me identical with *H. molle* of Host. *Fl. Aust.*

Root woody, brownish, knotty and creeping horizontally to the distance of a few inches, emitting many long pale fibres, simple or slightly branched. *Stem* 1 or 2 from the same root, from 12 or 18 inches to 3 feet high, slender, round, wavy, simple or very slightly branched, more or less rough with black gland-tipped setæ intermixed with stellate pubescence, particularly in the upper part, the base being nearly glabrous and having only a few, long, white, silky hairs scattered over it; leafless or most commonly with a solitary leaf (seldom more) at some indeterminate point of its length. *Leaves* mostly radical, few, persistent during inflorescence, soft and thin, pale green above, paler still beneath and often clouded with purple in my specimens, clothed on both sides, but thickest on the under side, with long, erect, woolly hairs, as are the nearly cylindrical deeply channelled petioles; various and unequal in shape and size, mostly ovate or ovate-oblong, rounded or subcordate at base, acute, obtuse or rounded and mostly entire at the point, unequally repandentate, the teeth more or less distinct, the lowermost often pointing backwards; stem-leaves, when present, like the radical ones, but on a shorter foot-stalk, usually more deeply toothed, more pointed or even acuminate. *Heads* of flowers few, forming an irregular corymbose panicle. *Involucral bracts* lanceolate, very acute, thickly beset externally with black gland-tipped spreading setæ intermixed with long white hairs and stellate pubescence, as are likewise the very unequal straight or ascending peduncles, and the small lanceolate bracts that often subtend the latter or are found at various parts of their length. *Florets* numerous, bright yellow; *ray* broad, truncate, deeply and acutely 5-toothed, the teeth not thickened at the back; *tube* hairy at top. *Styles* very long, slender and filiform throughout, their long summits (*stigmas*) at length strongly revolute.

4. *H. boreale*, Fries. *Northern Hawkweed*. "Stem erect leafy rough or hairy, branches subcorymbose, leaves ovate-lanceolate or lanceolate toothed, the lower ones tapering into a petiole, upper ones subsessile with an ovate rounded or cordate base, involucre blackish, scales appressed, ligules glabrous at the apex, achenes (blackish brown or red) slightly scabrous."—*Br. Fl.* p. 216. *H. inuloides*, Bab.? *H. Sabaudum*, *Sm. Engl. Fl.* iii. p. 367. *E. B.* t. 349. *H. sylvestre*, *Tausch.* secund Hooker in *Br. Fl.* 4th ed. p. 295; *Hook. in Comp. to Bot. Mag.* i. p. 307.

β. Leaves thick, dark green, very rigid.

In woods, thickets and on hedgebanks, but not common. *Fl.* July—September. 24.

E. Med.—In Firestone copse, Guildford lane, Alverstoke lynch. By the roadside from Ryde to Newport, about a quarter of a mile before reaching Staplers heath, but rather sparingly.

Root of several long, smooth, cylindrical, simple and fleshy fibres, with a tough central chord or medulla, and running horizontally near the surface. *Stem* erect, 1—4 feet high, or even more in the stouter var. now described, a little milky, round and simple in the lower, branched, furrowed and angular in its upper part, purplish towards the base, roughish with callous points and hispid with white, stiffish, partly spreading and partly appressed hairs, mixed here and there with a longer, softer, almost downy shaginess. *Leaves* very numerous, most so towards the middle of the stem, in β. stiff and leathery, in the common form paler and more flexible, in β. dark green and nearly glabrous above, paler and rough with short hairs and bristly points on the under side, which in the lower leaves is often tinged with purple. *Root-leaves* attenuated into very short petioles, gradually contracting in those above, so that the upper stem-leaves and those of the branches are quite sessile but not at all clasping; all the leaves more or less ovato-lanceolate, distinctly toothed, the teeth rather small, few, distant, straight or slightly curved, and pointing forward; the margins of the leaves are inflexed in a trifling degree. *Flowers* on branching peduncles, forming a sort of corymbose panicle, an inch or rather more in diameter, of a full lemon, almost golden, yellow. *Scales* of the involucre blackish green, not pale-edged, erect, hispid with scattered stiff hairs from black tubercular bases, close-pressed, the tips of a few of the lowermost shorter ones alone occasionally diverging from the appressed position. *Rays* of the *florets* broad, deeply 5-toothed, and as well as the very short *tube* hairy on the outer side. *Styles* very long, and as well as the very long reflexed lobes of the stigma greenish. *Achenia* linear, a little curved at the apex, dark purple brown, almost black, with 5 or sometimes 6 prominent ribbed angles, and as many finer intermediate ones that terminate in a point just short of the principal ridges: the faces of the seed appear scarcely wrinkled, but under a high magnifier present innumerable longitudinal striæ and minute rough points. *Pappus* brownish white, rough and jointed.

Our Isle-of-Wight plant is certainly the *H. Sabaudum* of Smith, whatever the Linnæan species so called may be, and, though rather rare, is common enough in other parts of England, as in Devonshire, Sussex, the New Forest, &c.

5. *H. umbellatum*, L. *Umbelled Hawkweed*. "Stem erect simple corymbose or subumbellate at the apex rigid very leafy, leaves oblong-lanceolate or linear toothed or entire, lower ones attenuated at the base, upper sessile-acute or rounded at the base, peduncles and sometimes the involucre with stellate down not hairy, scales obtuse with recurved points."—*Br. Fl.* p. 217. *E. B.* t. 1771.

β. Leaves broader, with large and sharp teeth pointing forwards.

On gravelly or sandy heaths and commons, hedgebanks, in groves, thickets and bushy places; in many parts of the island abundantly. *Fl.* August, September. 24.

E. Med.—Plentiful on Lake common and Royal heath. Heathy ground about Niton and Whitwell heath, near Smallgains, abundantly. Plentiful on Yarbury hill, by Niton. Common between Rookley and Bohemia. In the sandy lane between Morton farm and Grove. Anthony's common, near Ryde.

W. Med.—Near Kingston.

β. In the hollow on the road between Blackwater and Rookley. On Apse heath,* frequent.

Root with many long, round, simple fibres. *Stem* 1—2 feet high, rounded, solid, rough with minute hairs or bristles. *Leaves* scattered above, more crowded below, alternate, linear-lanceolate, acute, slightly hairy, dark green, of a firm texture, their margins incurved with many or few teeth pointing forwards, sometimes with only a single tooth towards the base, the rest of the leaf quite entire. *Flowers* large, bright yellow, the central one expanding first, on long erect pedicels, springing from a common point, and thus constituting an imperfect umbel or cyme, with mostly several scattered peduncles below. *Involucre* blackish green, its outer scales recurved at the tips, inner ones erect, all acute, with a dark keel. *Florets* all perfect, hairy at the top of the tube, the *ligulæ* long, with 5 equal teeth. *Receptacle* slightly hairy; alveoli deep and close together. *Achenia* angular, striated.

The var. *β.* differs only in the greater breadth of the leaves, which have several large teeth curved and pointing forwards.

Order XLIV. CAMPANULACEÆ, *Juss.*

"*Calyx*-tube adnate with the *ovary*, mostly 5-lobed, lobes persistent. *Corolla* regular or irregular, mostly 5-lobed, marcescent, aestivation valvular. *Stamens* free from the corolla and equal in number with its segments, free or more or less combined. *Anthers* 2-celled, free or more or less cohering, opening longitudinally. *Ovary* with 2 or more polyspermous cells. *Style* 1, pubescent on the upper half. *Stigma* simple or lobed, naked (not surrounded by a circle of hairs). *Fruit* dry, opening between the dissepiments. *Seeds* fixed to the axis. *Albumen* fleshy. *Embryo* straight.—Herbaceous or suffruticose. *Leaves* mostly alternate, without stipules. *Flowers* generally blue or white. Lactescent and bitter.

I. CAMPANULA,* *Linn.* Bell-flower.

"*Calyx* 5-parted. *Corolla* mostly bell-shaped, with 5 broad and shallow segments. *Anthers* free; *filaments* dilated at the base. *Stigma* 3—5 fid. *Capsules* not elongated, 3—5 celled, opening by lateral pores outside the segments of the calyx."—*Bab. Man.*

* Name, a diminutive of *Campana*, itself a Latin word of the Lower Empire to signify a bell, which instrument was first used in churches by Paulinus, Bishop of Nola, in *Campania*.

The species of *Campanula* diminish extremely in insular climates and towards their western shores, apparently avoiding the sea air as injurious. Hence they are found to increase in proportion as we advance eastward on the Continent, where, as in Germany, Switzerland, Hungary, Russia and Siberia, they abound in great variety. Even amongst the comparatively few that inhabit Britain, the same distribution is observable, the midland and eastern counties of England producing them in the greatest number and frequency, whilst in Scotland, Wales, Ireland and the western counties of England there is a sensible deficiency of the species. In the Channel Islands not a single *true* *Campanula* is known to grow wild: even the common Harebell is banished from their Flora.

1. *C. glomerata*, L. *Clustered Bell-flower*. *Little Throatwort*. "Stem angular simple nearly smooth, leaves scabrous crenate oblong-lanceolate, root-leaves petiolate, those of the stem semi-amplexicaul, flowers sessile mostly in a terminal cluster, capsule erect with the clefts at the base."—*Br. Fl.* p. 248. *E. B.* t. 90.

On dry hilly pastures, chalk downs and banks, sometimes in woods; not unfrequent. *Fl.* May—October. 24.

E. Med.—Very abundant on the summit and North-eastern slope of Bembridge down, with flowers much aggregated. Bembridge, *Dr. Bostock* in *Withering* !!!

W. Med.—On Freshwater down in various places, as near the Needles hotel and lighthouse, but scarcely an inch high, being browsed down by the sheep. Most abundantly (dwarf var.) on the down (Calbourne down?) between Calbourne and Brixton, nearly at the back of the great plantation at Westover, some specimens with white and others with pale blue flowers. Afton and Freshwater down, in plenty, *Mr. W. D. Snooke* !!!

Root of several long, whitish, cylindrical, simple or branched fibres, often a little creeping. *Stem* 1 or more, erect, simple or a little and very shortly branched above, solid and leafy, milky, from one or two inches high on open exposed downs,* to as many feet in woods and on sheltered banks, rounded and somewhat angular from the slightly decurrent leaves, often purplish above, and downy all over with white, simple, deflexed or partly spreading hairs. *Leaves* a good deal like those of Sage, dull gray-green, rugose, strongly and copiously veined and reticulated beneath, waved, their margins more or less evenly crenato-serrate, somewhat harsh with fine, short, close, erect pubescence. *Radical* and some of the lower stem-leaves on long, semiterete, channelled and slightly winged petioles, oblongo-lanceolate, cordate at the base or attenuated into the footstalk on the same plant, undulated or nearly plane; upper stem-leaves almost sessile, the highest of all quite so, short, ovate and a little clasping, usually much waved and twisted, their points deflexed. *Flowers* sessile, erect, mostly conglomerate in a dense, terminal, bracteated head or cluster on the main stem, with several lateral smaller clusters in the axils of the upper leaves, deep purple or violet-blue, sometimes white, nearly an inch in length. *Bracts* usually 3 beneath each cluster, broadly ovate. *Calyx* much shorter than the corolla, pubescent, its segments triangular-lanceolate, erect and acute. *Corolla* hairy within and without, subcylindrical, 5-ribbed, cleft nearly half-way down, the segments ovato-oblong, acute, reflexed or spreading. *Stamens* with very short, flat, pellucid filaments; *anthers* greenish yellow, linear, curved and twisted. *Style* shorter than the corolla, cylindrical, more or less pubescent; *stigma* downy, trifid, the lobes at first coarctate, at length revolute. *Capsule* small. *Seeds* rather few and large, ovate or elliptical, pale brown, flattish, with a compressed border, apparently covered with a close finely striated cuticle.

* On the bleak and lofty downs at the western extremity of the island this species scarcely attains an inch in height, and specimens from thence were actually described and figured by *Withering* (*Arrangem. of Br. Pls.* 3 ed. ii. p. 282, and pl. xi. fig. 8) as a new species of *Gentian*, and named by him *G. collina*.

This species is frequent in gardens under some of its numerous forms, which by the continental botanists are held to be distinct species.

2. *C. Trachelium*, L. *Nettle-leaved Bell-flower*. *Great Throat-wort*. "Hispid, stem angular, leaves coarsely double-serrate, lower ones cordate long-stalked, upper nearly sessile lanceolate acuminate, peduncles axillary few-flowered, calyx-segments lanceolate erect, capsule drooping with the clefts at the base." — *Br. Fl.* p. 248. *E. B. t.* 12.

β. Flowers white.

In dry chalky and hilly woods, thickets, hedges and on bushy declivities in the interior of the island; abundantly in West Medina, scarcely found in the eastern hundred. *Fl.* July—September. *Fr.* September, October. 24.

E. Med. — Undercliff, *Sheridan's Guide*.

W. Med. — Frequent in the woods at Swainston and Rowledge, where it was noticed by my friend *G. Kirkpatrick, Esq.* Abundant in Tolt wood, and common elsewhere about Gatcombe in fields and hedges. In Lorden copse, between Cherverton and Shorwell. Chalky banks by Shorwell, sparingly. Near Chillerton. Plentiful in Slucombe coppice, near Roughborough. Westridge copse, common. Hedge between Idlecombe and Shorwell, *Mr. W. D. Snooke*, and everywhere avoiding the coast and flat country.

β. A specimen or two with the common blue-flowered kind in Lorden copse.

Root whitish, tapering, with several strong lateral branches. *Stems* 1 or more, 2—4 feet high, erect, angular, leafy, hollow in the centre, simple or branched (sometimes quite bushy), rough with scattered bristly hairs. *Leaves* alternate, very various in breadth, lanceolate, ovato-lanceolate or even triangular, subcordate at the base, on very short petioles; much resembling those of the common Nettle in size, shape and colour, rough and hairy all over, coarsely and irregularly incise-serrate. *Flowers* solitary or in clusters of 2 or 3 together in the axils of the leaves, chiefly towards the termination of the stem and branches, on rather short simple or divided pedicels, erect or nodding, bright purplish blue, sometimes white, large and handsome. *Calyx* scarcely half the length of the corolla, bristly; *sepals* lanceolate, acute, single-ribbed, scarcely spreading. *Corolla* bell-shaped, above an inch long, 5-ribbed, the segments a little spreading or reflexed, somewhat bristly without, villous within. *Style* densely pilose, the hairs erect. *Capsule* brownish, membranous, nodding, nearly hemispherical, hispid and angular, with three stout branching ribs, dehiscent by as many oblong transverse pores in the angles formed by the union of the ribs at the base. *Seeds* very numerous, reddish gray or ash-colour, broadly ovate or elliptical, flat and sometimes with a slight compressed margin; appearing under a high magnifier as if covered with a thin and exquisitely finely striated pellicle.

3. *C. rotundifolia*, L. *Round-leaved Bell-flower*. *Heath-bell*. "Glabrous, root-leaves subrotundo-cordate crenate (very soon withering), lower cauline ones lanceolate, upper linear entire, flowers solitary or racemose drooping, calyx-segments subulate, capsule drooping with the clefts at the base." — *Br. Fl.* p. 248. *E. B. t.* 866.

β. Flowers white.

In dry sandy fields and pastures, on heaths, walls, banks and chalky downs; abundantly, and most so in elevated situations. *Fl.* June—September. 24.

β. A few specimens by the roadside over Bleak down. [On Ashey down, *Dr. Bell-Salter*, Edrs.]

Capsules strongly deflexed or nodding, subhemispherical, truncate, with several short prominent ribs. *Seeds* elliptical, pale brown, minutely and longitudinally reticulato-striate.

C. Rapunculus is said to have been found in the Undercliff by Lient. Ibbotson, late of this island; and *C. patula* in a hedge above Shanklin chine, by Albert Hambrough, Esq.; but I have not yet seen specimens of either.

The true Canterbury Bells of our gardens (*C. medium*, L.) I have twice found growing spontaneously on bushy banks at Brading and Bonchurch.

II. SPECULARIA, *Heister*. Venus's Looking-glass.

"*Corolla* rotate. *Capsule* linear-oblong, prismatic, opening by lateral pores between the calycine segments. Otherwise like *Campanula*."—*Bab. Man.*

1. *S. hybrida*, Alph. DC. *Corn Bell-flower*. *Lesser Venus's Looking-glass*. "Stem simple or often branched from the base, leaves oblong-crenate waved, corolla widely spreading shorter than the calyx-segments, capsule triangular."—*Br. Fl.* p. 249. *Campanula*, L. *E. B.* t. 375.

In sandy or chalky cornfields and other tillage-land; pretty general and often very abundant. *Fl.* May—August. *Fr.* July, August. ☉.

E. Med.—Between Sandown and Shanklin, in fields by the cliff a little beyond the signal-station on Royal beath. Frequent in cornfields throughout the Undercliff, and in those above Steephill and St. Lawrence. About Cowes, not uncommon, also near Ashey.

W. Med.—Sandy fields at Brixton and Shorwell. Frequent on the (green?) sand of the South-west, generally in upland fields. Cornfields at Rowledge. Cornfields nearly opposite Yarmouth mill. Cornfield by the Needles hotel, Alum bay. About Thorley, Wellow and Westover.

Plant pale grayish green, hispid, lactescent. *Root* annual, whitish, slender, branched or nearly simple. *Stem* solitary or several (when more than one the central stem is upright, the lateral ascending), erect or decumbent at the base, mostly a little flexuose, simple or usually in the larger and older plants more or less alternately branched, often purplish below, hollow in the centre, acutely pentagonal and grooved from the winged and twisted angles formed by the decurrent inner corners of the leaves, hispid with short, white, spreading or partly deflexed bristles. *Leaves* small, from about 6 to 12 lines in length, alternate, pale yellowish green, those at the base of the stem obovate, obovate-oblong or spatulate, soon withering away; the rest oblong or ovate-oblong, obtuse, sessile and almost amplexicaul, their decurrent bases forming long winged angles on the stem, setose-hispid, strongly undulate and crisped on their mostly deflexed margin, faintly nerved. *Flowers* solitary, terminal, small, expanding only in clear weather. *Sepals* resembling the leaves, lanceolate, ovate-lanceolate or even ovate, often unequal, acute, longer than the corolla, with reflexed wavy margins. *Corolla* very small, rotate, deep violet or purple, whitish externally, a little hispid at the back and summit of the nearly orbicular apiculate segments along the strong dorsal ridge down the centre of each. *Stigma* clavate, entire, hispid and whitish. *Germen* linear, angular, furrowed and hispid, mostly with an adnate leaf or two at its base. *Capsules* pale whitish or purplish, 3-celled, erect, crowned with the leaf-like calyx, about an inch in length, setose-scabrous, very narrowly elongate-oblong or elliptical, mostly a little curved and twisted, deeply 3-lobed and trisulcate, the lobes rounded, opening between the cells by 3 valvate pores a little below the apex, hence quite beneath and exterior to the calyx-segments, to which they are either opposite or alternate, mostly the latter. *Seeds* numerous, exactly oval or elliptical, pale brown, exquisitely polished* and pellucid like a speculum.

* Whoever has considered the form, brilliant lustre and transparency of the seeds of this species will find a ready solution of the otherwise obscure reason for

S. Speculum, the Venus's Looking-glass of the gardens, is by many botanists thought to be merely a variety of *P. hybrida* with a larger corolla,—an opinion which seems to receive confirmation from the fact of the seed of the former, when sown, being said to produce both kinds.

S. Speculum is persistent in some chalky cornfields in the Undercliff, where it has been purposely disseminated. It is truly indigenous to most parts of Europe as high as 53° or 54°.

III. WAHLENBERGIA, *Schrader*. *Wahlenbergia*.

“*Capsule* half-superior, 3-celled, opening by 3—5 valves within the calycine segments. Otherwise like *Campanula*.”—*Bab. Man*.

1. *W. hederacea*, *Rchb.* *Ivy-leaved Wahlenbergia*. “*Stem* weak filiform, leaves all stalked cordate angulate-dentate, glabrous.”—*Br. Fl.* p. 249. *Campanula*, *L. E. B.* t. 73.

In damp turfy or heathy pastures, on sphagnum bog, moist banks, and bare humid spots on commons, &c.; rare? *Fl.* July, August. 24.

E. Med.—On moory ground not above 400 yards about *W.* from Rookley farm, in great plenty, as also on other parts of the same pasture-field, abundantly. On Bleak down in various places, especially on a buggy tract along the northern declivity above the road leading to Godshill, in some abundance; also at the edge of Lashmere pond, at the foot of the down, first found there by *Dr. Martia*, 1841. “In a marshy place called the Wilderness (or Appleford Wilderness), to the right of Bleak down, on the Niton road from Newport,” *Miss Eveleigh*. From this lady I had the first notice of the species as growing in the Isle of Wight.

A delicate, mostly pale green, very smooth herb, with interlacing, filiform, branched stems. *Rhizoma* long, slender, creeping, with small bundles of pale thready fibres. *Stem* filiform, angular, somewhat zigzag, branched alternately, various in length (usually but a few inches), when growing in open situations quite prostrate and rooting, somewhat erect when creeping amongst and supported by other herbage. *Leaves* of a pale, tender, rarely dark green, a little shining and succulent, alternate, the lower ones on very long petioles which are flattened above, angulate-cordate or roundish and sometimes nearly entire; upper leaves much like those of Ivy in miniature, acutely 5-lobed and angular, the angles tipped with a small, pale, triangular point. *Peduncles* solitary, opposite and terminal, mostly with a leaf or two on their lower part or just above their insertion, long, slender, single-flowered. *Calyx* scarcely $\frac{1}{2}$ th the length of the corolla, its segments erect, linear-lanceolate, acute and distant, quite free (not adnate with the ovary). *Corolla* dilute purplish blue, with deeper-coloured ribs, about $\frac{1}{3}$ rd of an inch long, subcylindrical, cleft about $\frac{1}{3}$ rd of its length into 5 roundish ovate spreading segments, quickly fading after being gathered. *Stamens* inserted opposite to the calyx-segments; *filaments* enlarged downwards, and rough below with stiff hairs. *Style* linear, white, enlarged at the base, glanduloso-pilose towards the summit, shorter than the corolla; *stigma* 3-cleft, glanduloso-pilose, its short segments at length reflexed.

The popular name bestowed on another and nearly allied species of *Specularia*, of Venus's Looking-glass, so common in gardens, and by some supposed to be a variety of the present, though I think most erroneously. Our English plant occurs more on the Continent than *S. Speculum*, and is confined only to the southern parts of Europe, as Italy, the S. of France, &c.; though not yet detected in Britain, *S. Speculum* is spread over the whole of Europe, as Germany, Holland, Belgium, &c.

IV. JASIONE, Linn. Sheep's-bit.

"*Corolla* rotate, in 5 deep narrow segments. *Anthers* united at their base. *Stigma* club-shaped. *Capsule* 2-celled, opening at the top by minute teeth. (Flowers collected into a head, within a many-leaved involucre)." — *Br. Fl.*

1. *J. montana*, L. Common Sheep's - scabious. Sheep's-bit. "Leaves linear waved hispid, peduncles solitary elongated, root annual or biennial." — *Br. Fl.* p. 250. *E. B.* t. 882.

In sandy or gravelly fields and pastures, on dry banks and heathy hilly places ; not unfrequent. *Fl.* June—September. ☉ (or ♂, *Hook.*)

E. Med. — Common in and about Shanklin chine, and on the banks of slipped land beneath the cliff immediately to the northward of it. Common on Royal heath and along the road from Newport to Niton, about Bleak down, &c. On Lake and Blackpan commons. Apse heath, and under the cliff at Shanklin, *Mr. Snooke !!!*

W. Med. — Frequent in and about Blackgang chine.

Plant about a foot high, often much less, sometimes more, acrid and milky. *Root* long, white and tapering, simple or a little branched, tough and woody in the middle, emitting a central, erect, often much-branched *stem*, and several ascending or reclining and spreading lateral ones, which are angular, very leafy, and mostly hispid with long, stiff, white hairs or bristles, in some varieties smooth. *Leaves* numerous, grayish green, sessile, linear-oblong, blunt, the lowermost about an inch in length, entire but twisted and undulated, their margins mostly deflexed, usually very rough like the stem with bristly hairs, single-ribbed and somewhat fleshy. *Flowers* light blue, pedicellate, in dense hemispherical heads, on very long, terminal, smooth and furrowed peduncles, strikingly like those of the *N. American Gilia capitata*, so common in gardens, both in form and colour, though very different in their more intimate structure. *Pedicels* smooth, inserted on a glabrous, flattish, lactescent receptacle or torus, which is surrounded by a plane involucre of 5 exterior and about as many interior ovate, entire or toothed bracts. *Calyx* subcampanulate, persistent, its lower tubular portion 5-ribbed and 5-angled, adnate with the ovary, the summit in as many erect, awl-shaped, distant, very acute segments. *Corolla* inserted on the top of the calyx-tube, deciduous, finally cleft to the very base into 5 linear or ligulate, equal, nearly erect segments, which are much longer than the calyx, but are often previously partially combined below into a tube. *Stamens* inserted into the tube of the calyx opposite the segments ; *filaments* erect ; *anthers* oblong, 2-celled, bursting before the expansion of the flower along their inner face, combined at their bases but not forming a tube ; *pollen* globular, purplish. *Style* roundish, blue, at first included, its club-shaped extremity at that time beset with stiff spreading hairs for arresting the pollen which copiously covers and almost conceals it ; afterwards the style elongates and becomes much exerted, and its extremity glabrous and slightly cloven. *Seeds* numerous, very small, brown, elliptical-oblong, compressed, beautifully smooth, appearing finely and longitudinally wrinkled under a very high power of the microscope, polished and pellucid.

The plant has a hot acrid taste and scent.

Dr. Macreight, in his 'Manual of British Botany,' p. 146, mentions a variety of this plant (the *β. maritima* of DC.) as growing on the shore near Portsmouth, which is very hairy, with prostrate stems, short cauline leaves, hirsute calyx, and obtuse outer leaves of the involucre.

Order XLV. ERICACEÆ.

"*Calyx* 4—5 parted, persistent. *Corolla* monopetalous, 4—5 parted, usually regular and marcescent. *Stamens* 8—10. *Anthers* 2-celled, opening by pores and often appendaged. *Ovary* surrounded by a disk or scales, free or adhering to the corolla. *Fruit* capsular or baccate, with several cells, many-seeded."—*Bab. Man.*

Tribe I. ERICEÆ.

"*Fruit* capsular, dry. *Anthers* 2-celled. *Disk* hypogynous. *Testa* close."—*Bab. Man.*

I. ERICA, Linn. Heath.

"*Calyx* of 4 leaves. *Corolla* campanulate or ovate, often ventricose, marcescent. *Capsule* 4-celled, 4-valved, loculicidal, dissepiments adhering to the middle of the valves."—*Br. Fl.*

1. *E. cinerea*, L. *Fine-leaved Heath*. "Anthers with 2 serrated appendages at the base included, style a little exserted, corolla ovate, leaves ternate linear keeled acute glabrous shining, flowers in dense whorled racemes, ovary glabrous."—*Br. Fl.* p. 256. *E. B. t.* 1015.

β. Flowers white.

On heaths, commons and moors, also in dry barren woods and sterile gravelly or sandy pastures; most abundantly. *Fl.* June—September. *h.*

β. Here and there by accident. Heath near Yarmouth, Isle of Wight, *Pulteney* in Bot. Guide.

Capsules very small, purple and glabrous, subglobose and obscurely quadrangular, with 4 or 8 furrows, flattened at top. *Seeds* several, of an irregularly oblong or ovate figure, more or less terete, angular or pointed, for the most part purple, but often reddish or yellowish (abortive?), punctate or reticulate all over.*

2. *E. Tetralix*, L. *Cross-leaved Heath*. "Anthers with 2 acute awns at the base included, corolla ovate as long as the style, leaves 4 in a whorl linear revolute at the margin ciliated, flowers umbellate-capitate, pedicels hoary, ovary pubescent."—*Br. Fl.* p. 255. *E. B. t.* 1014.

β. Flowers pure white.

On damp heaths, wet moory ground, and in bogs; frequent. *Fl.* June—August. *h.*

On Bleak down, in plenty. Abundant in the wettest bog on the moors around the Wilderness. Bridlesford heath.

β. Occasionally. I have gathered it on Bleak down, at Blackgang, and about the Wilderness. Not uncommon at Bridlesford heath, Isle of Wight, *Pulteney* in Bot. Guide.

* The meshes appear under a moderate magnifier as simple depressions, but under lenses of a higher power are seen to form a real network.

II. CALLUNA, Salisbury. Ling.

"*Calyx* of 4 coloured leaves, concealing the *corolla*, accompanied by 4 bractæas resembling an outer calyx. *Corolla* campanulate, marcescent. *Stamens* 8. *Capsule* 4-celled, 4-valved, septicidal and septifragal (valves opening at the dissepiments which separate from them and adhere to the axis of the fruit)."—*Br. Fl.*

1. *C. vulgaris*, Salisb. *Common Ling. Br. Fl.* p. 257. *Erica*, L.: *E. B.* t. 1013.

β. tomentose.

On barren moors, heaths, and in dry, sterile, sandy woods, thickets and pastures; abundant. *Fl.* June—August.

β. Youngwood copse, and on Bleak Down, commonly.

Tribe II. VACCINÆÆ.

"*Fruit baccate, fleshy. Anthers 2-celled. Disk epigynous.*"—*Bab. Man.*

III. VACCINIUM, Linn. Whortleberry.

"*Corolla* ovate, campanulate or rotate, 4—5 fid. *Berry* globose, 4-celled, many-seeded."—*Br. Fl.*

1. *V. Myrtillus*, L. *Common Bilberry.* "Peduncles 1-flowered, leaves ovate-serrate glabrous deciduous, stem angular."—*Br. Fl.* p. 251. *E. B.* t. 456.

In dry woods, on downs and elevated heathy places; not unfrequent. *Fl.* April, May. *Fr.* July. *β.*

E. Med.—On Shanklin down. Abundant on the dry heathy part of Apse castle, about America. On Blackpan common. Head Down, near Niton. On Yarbury hill.

W. Med.—[Near Kingstone, on the heathy roadside towards Godshill, *Dr. Bell-Salter*, Edrs.]

A humble shrub, scarcely above a foot high, and of no great beauty. *Root* long, tough, creeping horizontally. *Stem* upright or ascending at the base, where it is covered with a rough brownish bark, much branched above in a twiggy irregular manner, the branches green, with sharp, ridgy, almost winged angles, glabrous, and of no long duration, probably biennial only, some on every plant being always dried up and leafless. *Leaves* alternate, on very short stalks, deciduous, of a bright pale green, thin and lucid, ovate-acuminate, glabrous, with fine glandular serratures, pale and reticulated beneath. *Flowers* already appearing early in April with the opening leaves, solitary, axillary, drooping, shortly stalked, greenish tinged with or almost wholly red. *Calyx* a plain, circular, waved, entire or slightly crenate rim without teeth, a mere prolongation of the outer coat of the ovary, greenish or purplish and glaucous. *Corolla* deciduous, globose, much contracted at the mouth, and there parted into 5 minute reflexed segments. *Stamens* 8—10 (sometimes, it is said, 12), inserted around a broad fleshy disk at the base of the style; *filaments* short, broad and bent forward; *anthers* dull orange, connivent, tapering, 2-celled; each cell with a slender, erect, curved horn at the back about the middle, dehiscing by a terminal orifice. *Style* straight, somewhat compressed and angular, a little exserted; *stigma* simple. *Berry* about the size of a small pea, globose, purplish black, with a glaucous bloom and a roundish

shallow depression at top; filled with a purplish juicy pulp of a watery acid flavour. *Seeds* numerous, reddish, very small, subreniform and angular, reticulated with sharp slender ridges like filigree.

2. *V. Oxycoccus*, L. *Common Cranberry*. Peduncles terminal single-flowered, leaves ovate evergreen glaucous beneath their margins revolute and entire, corolla 4-partite revolute, stem filiform. *Br. Fl.* p. 252. *E. B.* t. 319. *Oxycoccus palustris*, *Rich.*

In spongy turfy bogs, amongst sphagnum and other mosses; very rare. *Fl.* May, June. *h.*

E. Med.—In a sphagnum boggy meadow by the Medina, between Cridmore and Appleford farms, forming part of a peat-bog called the Wilderness or Appleford Wilderness, in considerable abundance.

I had not succeeded in finding this plant in fruit, and scarcely even in flower; but in 1848 Dr. Bell-Salter gathered a handful of the ripe berries, which he observed to be in a great measure concealed amongst the *Sphagnum* on which the plant delights to flourish.

Order XLVI. MONOTROPACEÆ, *Nutt.*

"*Calyx* 5-partite or 5-sepaled, persistent. *Corolla* regular, gamopetalous, ovate or campanulate, or wanting. *Stamens* 8—10, sometimes alternating with as many recurved glands; *anthers* sometimes opening transversely, sometimes parallel-celled with bristles at the base, never opening by pores at the base or apex. *Ovary* without a conspicuous entire hypogynous disk, 4—5 celled, many-seeded. *Style* single. *Stigma* discoid, somewhat margined, *Capsule* 5-celled, 5-valved, loculicidal. *Seeds* numerous, chaffy or winged at one end. *Embryo* minute, in the apex of the fleshy *albumen*.—Herbaceous, growing among the roots of Pines and other trees; stems brown or almost colourless, leafless, but covered with scales."—*Br. Fl.*

I. MONOTROPA, *Linn.* Bird's-nest.

"*Perianth* (corolla, DC.) of 4—5 leaves, cucullate at the base, with or without as many external alternate scales or bracteas (calyx, DC.) *Anthers* 1-celled, 2-lipped. *Seeds* chaffy."—*Br. Fl.*

1. *M. Hypopitis*, L. *Yellow Bird's-nest*. Stem glabrous many-flowered, flowers racemose, lateral ones with 8, terminal with 10 stamens. *Br. Fl.* p. 262. *E. B.* t. 69.

In woods, groves and plantations, principally in those of fir or beech; but rarely with us. *Fl.* July. *Fr.* August, September. *2f.*

E. Med.—By the footway through the Undercliff from Luccombe to Bonchurch, *Mr. J. Woods, jun.*, in *Bot. Guide*.

W. Med.—In a large plantation of fir and beech adjoining Calbourne New Barn. In the great plantation of fir, beech, &c., on the slope of the down at Westover, gathered sparingly in one spot only, 1843.

Root a bundle of numerous, brownish, filiform, much-branched, somewhat knotty fibres, creeping amongst the soil, which they so consolidate as to render their separation from it for the purpose of examination or preserving extremely

difficult to accomplish. *Stems* solitary or clustered,* from about 4 or 6 to 12 or 15 inches high, simple, or, it is said, sometimes slightly branched, erect or inclining, straight or flexuose, solid, rounded, obscurely angular and furrowed, brittle and glabrous, tapering at base to a rather narrow point of attachment at the root, pale and colourless in their lower under-ground portion, which is closely covered with pale or blackish, imbricating, diaphanous and membranaceous scales, that are unequal, ovate, ovato-lanceolate or oblong, pointed or obtuse, more distant on the superior emerged part of the stem, which, together with the entire flowers, is of a dilute brownish yellow or tan-colour, varying to straw-yellow or waxy white. *Raceme* terminal, being simply a continuation of the stem, and with the summit of the latter at length more or less strongly decurved so as to appear drooping, convolute or almost circinnate, at length erect; short and dense, but as the flowering advances elongating and becoming laxer or more open. *Flowers* numerous, crowded, erect and appressed, concolorous with the stem, between bell- and pitcher-shaped, ventricose at base, 5 or 6 lines in length, on very short pedicels or nearly sessile. *Bracts* one or several, similar to the cauline scales, but attenuated at base, often eroso-dentate, concave, embracing the flower. *Perianth-segments* in the terminal flower 10, in the lateral blossom 8, caducous, the 4 or 5 exterior† (*calycine*) very similar to the bracts, oblong or narrowly wedge-shaped, a little hairy within, gibbous or almost spurred at base, which is formed into a small nectariferous sac or hood and thickened; their tips erose, obtuse, a little spreading; *inner (coralline) segments* like the outer but more attenuated downwards, not hooded, strongly erose, often overlapping the others. *Stamens* in the terminal and lateral flowers respectively 10 and 8, about as long as the gynecium, inserted close at the base of the ovary in two whorls, with a yellowish oblong-obtuse and reflexed gland-like process between each stamen; *filaments* whitish, slightly setoso-pilose or glabrous, a little flattened, curved over the germen, those of the inner verticil somewhat the longest; *anthers* of 1 cell, bursting transversely by two lip-like valves, the lower lip much the largest, round and spreading horizontally; *pollen* white, globose, angular? sometimes enveloped in woolly filaments. *Style* very short and stout, columnar; *stigma* large, fleshy, peltate-orbicular, 5—10 lobed, with a funnel-shaped radiately grooved cavity; quite glabrous. *Ovary* glabrous, elliptico-globose, faintly lobed and furrowed. *Capsules* the size of peas, quite erect, deep rusty brown, globose or slightly elliptical, 4 or 5 lobed by a central furrow along each valve at the back of the dissepiment, puckered and sprinkled with a few warty points, crowned with the style. *Valves* 4 or 5 (the terminal capsule 5-valved), separating at their inflexed summits, the dissepiments contrary to the sutures, fitting between the folds of the placentæ and united to a common axis below the latter, thereby, as Dr. Darlington remarks of the American species, preventing the valves from expanding. *Seeds* very numerous and minute, scobiform (seldom perfect, *Hook.*), appearing as a pellucid yellow globule in the centre of a collapsed, membranous, reticulated arilla, which is tubular and open at both ends, and fixed to both surfaces of the double placentæ, which at length separate by curving outwards in the middle, remaining attached at top and bottom.

The entire plant has a strong earthy smell, which has been compared to various and very dissimilar substances, as primroses, bees'-wax and vanilla. To myself the odour is far from agreeable, reminding me more of moistened rhubarb than of anything else.

Our Isle-of-Wight plant is quite glabrous, and appears to be the *M. Hypophegea* of Wallroth, adopted as a distinct species by some writers.

* The root seems always to form several stems, though these are not constantly emitted from their under-ground hybernacula simultaneously.

† The 8 or 10 perianth-segments seem to be inserted nearly, if not quite, in the same plane; hence the distinction betwixt calyx and corolla, as made by some authors, is more imaginary than real; besides, the fact of the so-called petals actually overlapping the supposed sepals is adverse to the idea of a double floral envelope.

Order XLVII. ILICACEÆ.

"*Calyx* of 4—6 imbricated lobes. *Corolla* 4—6 lobed, imbricated in æstivation. *Stamens* 4—6, alternate with the segments of the corolla. *Ovary* with from 2—6 or more cells. *Ovules* solitary, pendulous from a cup-shaped seed-stalk. *Stigmas* several or lobed, nearly sessile. *Fruit* fleshy, with from 2—6 or more strong 1-seeded nuts. *Albumen* fleshy.—Trees or shrubs. Leaves coriaceous. Flowers small, axillary."—*Br. Fl.*

I. ILEX, Linn. Holly.

"*Calyx* 4—5 toothed. *Corolla* rotate, 4—5 cleft. *Stigmas* 4, sessile. *Berry* spherical, including 4 nuts. (Some flowers destitute of pistil)."—*Br. Fl.*

1. *I. Aquifolium*, L. Common Holly. Holm. Vect. Christmas. Leaves persistent ovate or ovate-elliptical acute shining lucid and glabrous, of the lower branches waved repando-sinuate spinosodentate, of the upper often entire or nearly so flat, peduncles axillary short many-flowered, flowers subumbellate, ends of the branches elongate straight somewhat succulent. *Br. Fl.* p. 262. *E. B. t.* 496.

In woods, thickets, hedges, and on dry bushy or heathy banks and hill-sides; frequent. *Fl.* May, June.* *Fr.* October. †.

A large shrub or small tree, sometimes of very considerable size, from 20 to 70 feet high, often of a pyramidal outline, at other times of very irregular growth, the bark on the trunk and main branches ash-gray, on the younger and flowering somewhat angular ones green, and at their extremities clothed with an extremely short pile or knap. Leaves persistent, about $2\frac{1}{2}$ or 3 inches long, on shortish semiterete petioles, alternate or scattered, coriaceous, very rigid, ovate-lanceolate or oblongo-elliptical, very acute, quite glabrous, dark glossy green above, pale and scarcely shining beneath, obscurely veined, their thickened cartilaginous and somewhat deflexed margins for the most part abruptly waved, sinuate and produced into irregular teeth, each tipped, as is the point of the leaf, with a very stiff pungent spine, and which in some cultivated varieties are numerous scattered over the whole upper surface: on the higher branches, at least in old trees, the leaves are for the most part either partially or entirely flat and destitute of spines, at other times all the leaves are plane and unarmed, or some of the branches bear prickly, the rest entire, leaves promiscuously. Stipules none. Flowers in axillary, often crowded, compound or subumbellate, almost sessile clusters,† sometimes solitary or few together, greenish white tipped with brownish red at the back, $\frac{3}{8}$ ths of an inch across, on short, round, slightly downy, erect pedicels, about the length

* In January, 1848, during severely cold weather, which had already lasted several days, a holly-bush in a garden in Nelson street, Ryde, had numbers of its fully developed flower-buds actually opened, and many more ready to expand, thus anticipating the usual flowering time of the species fully four months, and that under most unfavourable circumstances.

† These fascicles consist of several 2- (or more usually 3-) forked peduncles springing from a common centre, the middle flower-stalk being destitute of bracts.

of the flower-buds, and having mostly a pair of minute pointed bracts below the middle of each, in addition to others at the base of their common peduncle and that of the entire cluster. *Calyx* persistent, small, downy, with broad, blunt, shallow, fringed segments. *Corolla* in 4 (sometimes 5) deep obovate segments, minutely fringed at their concave tips, otherwise glabrous, at length reflexed. *Stamens* erect, rather longer than the corolla, inserted between the segments; *filaments* white, glabrous; *anthers* and their globular pollen pale yellow, introrse, roundish ovate. *Germen* 4-cleft at the summit; *style* obsolete; *stigmas* greenish. *Berries* persistent through the autumn and winter, bright scarlet, rarely yellow, globose or sometimes a little ovoid, the size of peas, scarred with the 4 blackish points of the stigmas, filled with a dryish, mealy, slightly bitter pulp. *Seeds* 4, erect, bony, oblong, trigonous, rounded at the back, deeply furrowed and rugose.

The earlier flowers are said to be generally imperfect, and such as are 4-cleft often to want the germen, which accounts for the small quantity of berries produced by some trees that flower abundantly.

My [late] friend E. J. Vernon, Esq., has remarked a sensible fragrance in the flowers of the Holly, from which tree it is not unlikely the hamlet of Hulverstone, in this island, may have derived its name, Hulver being an obsolete word for Holly: *Hülse*, Germ.; *Houx*, Fr.

The European Holly is represented in America by a species so closely allied to it (*I. opaca*) that the compiler of the 'Arboretum Britannicum' is inclined to regard it as a variety of the former. Few however who have seen *I. opaca* in its native places of growth will, I think, be disposed to coincide in that author's opinion. I have studied this species with great attention over an extensive range of country and climate, from New Jersey to the southern confines of Georgia, and westward to the Mississippi; and, although so similar to the common Holly of Europe in most particulars, it everywhere preserves its few peculiarities of character unaltered by geographical position. It is a far less handsome tree than the European Holly, of a looser, less compact or bushy mode of growth, rugged and torulose, arising from the extremities of the branches, being much more twiggy, shorter and slenderer, quite woody, and covered, like the older wood lower down, with a rough brownish bark, not, as in *I. Aquifolium*, long, straight, green and almost succulent; hence it is that, though very flexible, the branches of *I. opaca* have but little of that toughness which distinguishes the less ligneous shoots of the European Holly, and may be broken without difficulty. The leaves of *I. opaca* are of a dull yellowish green and scarcely shining, of an opaque aspect, as the specific name denotes, and in this respect much resemble those of *Quercus coccifera*, usually less waved or flatter than in *I. Aquifolium*, and with far less tendency in those of the higher branches to become unarmed or entire, those of the oldest trees generally bearing leaves of the same form throughout, which, excepting in the above particulars, exactly resemble those of the European species. The branches of the common American Holly have, moreover, but little of the upward tendency of those of the European tree, which on that account so often assumes the pyramidal shape, but spread horizontally and ramify irregularly. The berries are always smaller and usually of a duller red than in our own, but like the leaves vary in size on different trees; the latter sometimes assume a considerable degree of lustre, but their duller hue, comparative flatness and opacity, together with the short, slender, ligneous character of the extreme twigs, afford unerring diagnostics for distinguishing *I. opaca* from its cis-Atlantic congener. Lastly, the American Holly is far more hardy than the European, which is incapable of resisting the winters of the northern states, where the other is indigenous.

Order XLVIII. JASMINACEÆ.

"*Calyx* divided, toothed, persistent, sometimes 0. *Corolla* 4-cleft, valvate in æstivation, occasionally 0. *Stamens* 2. *Ovary* without any hypogynous disk, 2-celled, cells 2-seeded: ovules collateral, pendulous. *Style* 1 or 0: *stigmas* 1 or 2. *Fruit* a berry, drupe, or capsule, separable in two. *Seeds* with or without albumen.—Trees or shrubs. Leaves opposite, without stipules, simple or compound."—*Br. Fl.**

I. LIGUSTRUM, Linn. Privet.

"*Calyx* 4-cleft. *Corolla* 4-cleft. *Berry* 2-celled, with the cells 1—2 seeded."—*Br. Fl.*

Small, hardy, deciduous or subevergreen trees or large shrubs. The few species known are mostly natives of Asia. *Ligustrum* is closely allied to and partakes in character of all the following genera,—*Phillyrea*, *Olea*, *Chionanthus* and *Syringa*,—resembling the three former in its leaves and pulpy fruit, and the *Lilac* in its tubular corolla and close, terminal, paniced inflorescence.

1. *L. vulgare*, L. Common Privet. † *Prim* or *Print*. Leaves elliptical-lanceolate, panicle 4-sided compact. *Sm. E. Fl.* i. p. 18. *Br. Fl.* p. 263. *E. B.* xi. t. 764. *Curt. Fl. Lond.* ii. fasc. 5, t. 1. *Loud. Arb. Brit.*

In woods, thickets, hedges, bushy places and on banks, throughout the island; abundantly. *Fl.* June—July. *Fr.* October. ½.

Profusely about Ryde, as along the road to Brading, &c.

A shrub, from 4 to 8 feet high in the wild state; much branched, the branches straight, opposite, covered with a smooth, ash-coloured, greenish or reddish bark. Leaves shortly stalked, opposite, or occasionally subfasciculate, elliptic-lanceolate, pointed or partly obtuse, quite entire and glabrous, about 2 inches long, obscurely veined, dark shining green above, paler beneath, more or less persistent through the winter. Stipules none. Flowers milk-white, in dense, terminal, thyrsoïd panicles, which are 4-sided pyramids from the crossing at right angles of their short, slightly compound and downy branches. Calyx tubular, much shorter than the corolla, with minute, unequal, distant teeth. Corolla funnel-shaped, the limb in 4 (rarely in 5) ovate segments, a little thickened and hollowed at their tips. Stamens inserted on the tube of the corolla between the segments; anthers large, erect, yellowish white. Style very short, enlarged upwards; stigma oblong, cleft and somewhat recurved at the summit, embracing the style with its 2 decurrent lobes. Berries in dense 4-sided clusters, roundish, deep purple-black and shining, filled with a mealy pulp of a bitterish taste, ripening in October. Seeds 4, one or

* [The characters quoted above, from the 'British Flora,' are those of Oleaceæ in that work. The natural family Jasminaceæ of Lindley, as distinct from Oleaceæ, does not comprise the genera *Ligustrum* and *Fraxinus*; it is therefore used by our author, not as distinguished from the order Oleaceæ, but as synonymous with it. The above characters are therefore perfectly applicable.—*Edrs.*]

† The leaves of the Privet are the favourite food of the fine privet hawk-moth (*Sphinx Ligustri*, L.), the beautiful caterpillar of which is very common on this shrub and on Lilac-bushes in gardens at Ryde towards the close of the summer.

two usually abortive, smooth, convex at the back, the two inner faces plane. *Embryo* very large, its broad flat cotyledons lying a little obliquely in the axis of the acrid fleshy albumen.

The wood of the Privet is very hard, compact and heavy; and the berries, like those of the Olive, yield an oil by expression; their juice is also employed for staining playing cards of a violet colour. The flowers are perfectly honey-scented, and very attractive to bees.

This plant appears to prefer the neighbourhood of the sea to more inland situations, as I remark it to abound far more in this island than in the mainland of Hants at a distance from the coast. It occurs plentifully near Petersfield, which is quite in the interior of the county.

The Privet is much in use for garden-hedges, as it grows thick, bears clipping remarkably well, and flourishes even in the smoky atmosphere of London. From its abundance in the wild state with us, it is sometimes used in field-fencing, for which purpose it is however greatly inferior to the Whitethorn, and is now, I believe, but little employed. The long straight shoots are used in this island, from their toughness and pliability, in tying small bundles or faggots for firing by the country people.

A variety with entirely persistent leaves is commonly known as the Italian Privet, but is assuredly nothing but *L. vulgare* rendered evergreen by cultivation in a good soil, a state to which the wild plant often approaches with us very closely.

II. FRAXINUS, Linn. Ash.

"*Calyx* 0, or 4-cleft. *Corolla* 0, or of 4 petals. *Fruit* dry, indehiscent, 2-celled, 2-seeded, compressed and foliaceous at the extremity (a *samara*). *Seeds* solitary. (*Flowers* sometimes without stamens)."—*Br. Fl.*

1. *F. excelsior*, L. *Common Ash*. * Leaves pinnated, leaflets ovato-lanceolate acuminate serrated, flowers without either calyx or corolla. *E. Fl.* i. p. 14. *E. B.* t. 1692. *Br. Fl.* p. 264. *Guimp. und Hayne, Abbild. der Deutsch. Holtzart*, ii. 285, t. 214.

In woods, copses, hedgerows and hilly pastures; very common. *Fl.* April, May. *Fr.* October. ½.

Between Shanklin and Luccombe are many fine trees. A very fine but much decayed and injured tree by Apse farm strikingly picturesque in its outline.

A tree, of from 40 or 50 to 80 or 100 feet in height, with spreading branches, the smaller mostly opposite, very brittle, and usually uneven with knobby protuberances (scars of the old buds) at their extremities, the lower boughs more or less pendulous with incurved or ascending somewhat compressed extremities, and covered with a greenish gray very smooth bark, which on the trunk is in young trees cinereous and even, on old ones chapped and rugged. *Leaves* imparipinnate, from large blackish buds like the flowers, crowded on the young wood of the current year, on semiterete pale green petioles, tumid at their base and carrying a greenish black flower-bud in the axil of each. *Leaflets* mostly 6 or 7 pairs with an odd one, often 4 or 5 pairs, opposite, sessile or very slightly stalked, light yellowish or sometimes dark green above, glabrous and usually somewhat shining, paler beneath, and more or less woolly along the very prominent midrib, variable in shape, lanceolate or ovate-lanceolate to oblong or elongate-lanceolate or oblong-elliptical, acute or mostly acuminate, more or less attenuated at base, especially

* The leaves of the Ash nourish that valuable as well as brilliant beetle, the blistering or Spanish fly, which made its appearance in countless multitudes near Colchester in 1837: during that and the following season many were captured at Southampton and elsewhere, besides numerous specimens taken by myself at Ryde, and by others at Yarmouth, in this island.

the terminal one, which is either sessile like the rest, or on a stalk often of considerable length; all serrated, the serratures shallow, more or less distant and acute, pointing forward, often uncinatè, the base of the leaflets entire. *Flowers* in much-branched, paniculate, glabrous clusters, produced before the leaves at the extremities of the previous year's wood, from large buds with concave deciduous scales, of which the outer ones are greenish black, the inner of an olive-brown colour; sprinkled with rusty or gland-like or woolly hairs; quite destitute, in our only British species, of either calyx or corolla; some trees bear staminate blossoms above, others hermaphrodite flowers, or both intermixed. *Staminate clusters* dense, roundish, shorter than the hermaphrodite, thickly crowded, repeatedly forked, the ultimate forkings or pedicels bearing each 2 dark purplish, cordato-elliptical, deeply 2-lobed, nearly sessile *anthers* bursting laterally; *pollen* yellowish white, globular. *Bracts* solitary at the base of the pedicels, linear, minute, deciduous, the lower ones often broader and woolly. *Hermaphrodite flowers* on much longer, glabrous, erect pedicels. *Stamens* one on each side of the ovate, compressed, purplish germen, opposite to and immediately beneath its flattened faces, deciduous; *anthers* on long flattish filaments, appearing to me abortive, being smaller, scarcely lobed and indehiscent, having no lateral suture nor elaborating pollen.* *Style* tapering; *stigma* oblong, purplish, with 2 fleshy decurrent lobes. *Samara* in pendent clusters, reddish brown, often with a tinge of green, glabrous, elliptical-oblong or obovate, from about $1\frac{1}{4}$ to $1\frac{3}{4}$ inch in length and 3, 4, or 5 lines in breadth, tapering or slightly rounded at base, compressed, sulcate-striate, produced anteriorly into a flat, leaf-like, striated, coriaceous, mostly twisted wing, rounded at the end, which is entire, obtuse or even bifid, sometimes acute, with or without a small point or mucro. *Seed* (by abortion†) solitary, anatropous, pendulous from the summit of the cell by a long funiculus, 6 or 7 lines in length, elliptical, flat and wrinkled, in shape and colour much like small shrivelled almonds, and appearing under a high magnifier to be covered with pellucid bristle-like points: their taste, as Smith remarks, is bitter, hot and nauseous.

The "*fraxinus in sylvis pulcherrima*" is, next to the Elm, the tree which attains to the greatest magnitude as timber of any indigenous to the island, and is second to none but the Oak in value.

This tree inhabits every part of Europe as high as 61° in the interior regions, and 63½° on the western shores of Norway.

Order XLIX. APOCYNACEÆ.

"*Calyx* of 4 persistent divisions. *Corolla* regular, 5-lobed, deciduous; *æstivation* twisted. *Stamens* 5. *Anthers* 2-celled. *Ovaries* 2, 1—2 celled, many-seeded. *Styles* 2—1. *Stigma* 1, capitate, contracted in the middle (like an hour-glass). *Fruit* a *follicle*, *capsule*, *drupe*, or *berry*. *Seed* albuminose.—Trees or shrubs, often milky; leaves opposite, without stipules."—*Br. Fl.*

I. VINCA, Linn. Periwinkle. †

Calyx 5-partite. *Corolla* salver-shaped, the limb in 5 broad, oblique, truncate segments. *Filaments* jointed at the base,

* In some specimens gathered at Bonchurch, and chiefly staminate clusters, I observed that many of the stamens were placed in pairs between an elongated reddish pedicel like an abortive style, and carrying an abortive stigma at the summit.

† Occasionally I find both seeds perfected.

‡ Periwinkle: *Pervinca*, Ital.; *Pervenche*, Fr. Its ancient name was *Vinca*

dilated at their summits into 5 concave connivent scales, bearing the anthers. *Germen* and *style* binary, closely united together with 2 glands at their base. *Stigma* a tuft of hairs on the peltate summit of the style. *Follicles* 2, erect. *Seeds* naked (destitute of pappus).

A small genus of suffrutescent, rarely herbaceous or truly shrubby plants, with trailing or reclining, seldom erect* stems, opposite, entire, mostly persistent leaves, and blue or rose-coloured flowers. Natives chiefly of the extra-tropical parts of the Old World. Four species are found in Europe.

The genus *Vinca* is interesting to the British botanist, as being, like some others, the only indigenous representative of its natural order. Though closely allied to the beautiful Oleander of our conservatories, if not possessing the splendour of that favourite exotic, it at least does not share the poisonous qualities common to that shrub, with most other Apocynaceæ.

*1. *V. major*, L. *Greater Periwinkle*. Stems ascending, leaves subcordato-ovate fringed, flowers stalked, sepals as long as the tube of the corolla subulate ciliated, stigma with 5 angles. *Sm. E. Fl.* i. p. 340. *Br. Fl.* p. 265. *Lindl. Syn.* p. 176. *E. B.* viii. t. 514. *Curt. Fl. Lond.* fasc. 4, t. 19.

Half wild on hedgebanks and garden-fences, under walls, palings, and about shrubberies, seldom at any great distance from habitations, and certainly not indigenous. *Fl. March.* *Fr.* July, August. 24.

E. Med.—Plentifully along a hedge in the bye-road from Nettlestone green to Sea-view; doubtless escaped from the shrubbery at Fairy Hill. In a hedge by Pound farm, and in wet clay on a high bank of slipped land amongst brushwood at Watch-house point, appearing at first as if wild; but the spot was formerly a signal-station. Along a stone fence at St. Lawrence, near the well, in plenty, but evidently introduced. In a lane at Norton. About Godshill, on banks and garden-fences, in several places, but always near houses; abundant on a bank below the church, on the S. side. Under a wall at one end of a field called the Eastern Acres, at the Steephill estate, apparently wild, *Albert Hambrough, Esq.*

W. Med.—Between Cowes and Newport. Norton. Between Colwell and Weston, and many other parts of the island. S. of Yarmouth, plentifully, *Mr. W. D. Snooke*.

Root creeping extensively, somewhat knotty, and emitting bundles of whitish fibres, stouter and less tufted than in *V. minor*. *Stems* stouter, less hard, tough and rigid than in *V. minor*, scarcely shrubby, though long-enduring, the younger and flowering shoots erect, the older and barren ones reclining, ascending or arched, the rest trailing or sarmentaceous and rooting at the extremities; terete, pale green and shining, a little succulent, more or less but not much branched, usually reddish and mottled with purplish brown in their inferior part. *Leaves* far larger than in *V. minor*, the middle ones about 3 or 3½ inches in length and from 1½ to 2½ inches wide, persistent, much less rigid, of a deep, rich, lucid green and a somewhat greasy lustre, as if oiled, slightly fleshy, and becoming membranaceous

pervinca, possibly from *pervincere*, to overcome, in allusion to its power of overcoming disease; or perhaps as an occasional substitute for the laurel or myrtle crown of the victor in the field or the circus. *Gerarde* speaks of it as a never-failing remedy in dysentery and hæmoptysis. Or it may derive its appellation from its long trailing shoots usurping the soil in which it grows, and so choking or overcoming all other plants in its vicinity, but not by clasping or twining round them, which is contrary to its nature.

* The *V. rosea* of Madagascar, so common in our stoves, and now abundantly naturalized in the W. India Islands, recedes considerably in structure from the typical species of the genus.

in drying, which is not the case with the other; their margins, as in that, minutely deflexed, but fringed with fine, white, rather rigid hairs, otherwise perfectly smooth and glabrous, truly ovate, the upper leaves ovate-lanceolate; rounded or sometimes very slightly cordate at base, very pointed and acute but not acuminate. *Petioles* fringed, like the edge of the leaves, with fine white and spreading hairs, sometimes bearing in their axils a rudimentary branch like an oblong gland, for which it has been mistaken, besides which there is a pair of small, curved, greenish glands, pointing forward, about the centre of the leafstalk or sometimes towards its summit, usually not opposite each other, and often there is another smaller and compressed pair in the axil of the petiole. *Peduncles* glabrous terete, as long (longer, *Curt.*) as or mostly shorter than the leaves, solitary, single-flowered, axillary or rarely opposite, erect in flower, afterwards decurved. *Calyx* deeply cleft into 5 subulate, acute, single-nerved segments, that are fringed with white patent hairs along the edges, and have for the most part a pair of small tooth-like points near their base; variable in length, half or three-fourths as long as the tube of the corolla. *Corolla* similar to that of *V. minor*, but much larger, from about $1\frac{1}{2}$ to 2 or $2\frac{1}{2}$ inches across, of a rather paler blue in general, the segments of the limb with one of the corners sometimes acute or even pointed, the crown at the summit of the lobe deeper or more prominent between the segments and slightly emarginate, not lobed, the greater part of its margin free, not adnate to the segments as in the other. *Stamens* exactly as in *V. minor*, but the summit of the *anthers* (connectivum) is thicker than in that, slightly gibbous or convex underneath, hollow or pouched, the hairs on the back yellowish; *pollen-globules* diaphanous, cohering or agglutinated, roundish and subangular. *Ovary* and its two accompanying glands as in the other species.* *Style* as in *V. minor*, but more slender, and, as well as the lower half of the disk on its top, dull orange-coloured; *stigma*, as in that, a tuft of white hairs, but arranged in 5 plait-like lobes and angles pointed underneath, and having a stellate appearance above. *Follicles* precisely like those of *V. minor*, but larger, from about $1\frac{1}{2}$ to 2 inches long. *Seeds*† 2 or 3, exactly as in *V. minor*.

2. *V. minor*, L. *Lesser Periwinkle*.‡ *Vect. Sengreen*.§ Suffrutescent, stems procumbent, flowering shoots erect, leaves evergreen elliptic-lanceolate quite glabrous, flowers stalked, calyx-segments much shorter than the tube of the corolla lanceolate entire glabrous, stigma rounded. *Sm. E. Fl.* p. 399. *Br. Fl.* p. 264. *Lindl. Syn.* p. 176. *E. B.* xiii. t. 917. *Curt. Fl. Lond.* fasc. 3, t. 16.

In woods, copses, groves, and on hedgebanks in lanes; very rare in a perfectly native state with us, less so in a naturalized condition. *Fl.* March—October. *Fr.* August, September. 24.

E. Med.—At St. John's, in the narrow slip of wood between the house and the

* Smith and others consider the germen as double, in other words that there are two, because the seed is contained in two separate or distinct follicles. The style, too, has a longitudinal furrow, and the stigma a transverse slit or chink, indicating a double set of organs united throughout.

† I find the seeds of this species, like those of the other, attacked by some insect, which enters the follicles when still unripe.

‡ The leaves supply nourishment to the larva of the beautiful Oleander hawk-moth (*Sphinx Neri*, L.), of which four instances of the capture in England have happened within these last few years; once of the caterpillar, at Teignmouth, and subsequently of three of the perfect insects, at Dover, Southampton and the Isle of Wight, all of which I have myself seen. The Isle-of-Wight specimen was found by a boy at Sandown, and is now in excellent preservation, in the possession of my friend Miss Lucas, of Ryde.

§ *Sinugrün* is the German name for Periwinkle.

lodge, but no doubt originally planted. In a remote part of Centurion's copse, near Bembridge, *Miss More*.

W. Med.—Truly wild and profusely abundant in a copse called Bottomground, a little W. of Tollecombe farm, between Carisbrooke and Shorwell, and ripening plenty of seed. In a little wood near W. Cowes, *Miss G. Kilderbee!* also at Nunwell, in the "Ladies Walk," but perhaps not wild there.

Root (rhizoma) knotty, emitting copious long, slender, brownish white, much-branched and creeping fibres. *Stems* numerous, prostrate and trailing, often here and there rooting, the sterile shoots from about 1 to 3 feet in length, simple or slightly branched, leafy, hard, tough, rigid and somewhat woody below, smooth, glabrous and shining, terete, with a slight alternating furrow on each side, naked below. *Leaves* opposite, evergreen, truly elliptical or elliptical-lanceolate, about 2 inches or less in length and 1 inch wide, those towards the bottom and summit of the stems smaller than the leaves of the centre, of a very firm dry texture, deep dark green above, especially when old and in shady situations, brighter and paler when young, and in more open places somewhat yellowish green, occasionally, as in gardens, variegated with white; much paler beneath, quite glabrous along their minutely deflexed margins, more or less acutely pointed but not acuminate, tapering below into the extremely short semiterete petioles, which do not exceed 2 or 3 lines in length and are very minute and slightly ciliated, the midrib and lateral veins sharp, biliform and prominent above. *Stipules* none. *Flowers* few, scentless, on the span-long erect or reclining shoots of the current year about 1 to 1½ inch in diameter, of a somewhat pale or dilute purplish blue varying to a reddish or violet colour, sometimes, especially in gardens, white, where also a variety with full or double blossoms is not uncommon. *Peduncles* solitary, axillary or sometimes opposite, erect in blossom, mostly shorter than the leaves, terete, single-flowered. *Calyx* small, hardly ¼rd the length of the tube, deeply cleft into 5 oblong-lanceolate, perfectly glabrous (not ciliated) segments, that are single-ribbed, erect and somewhat fleshy, scarcely pointed, nearly equal. *The limb* of the *corolla* deeply cut into 5 or sometimes 4 oblique, flatly spreading, cuneato-rhomboid, truncate, membranous segments, with rounded corners that are much longer than the funnel-shaped, slightly furrowed and fleshy tube, which is densely villous in the centre just above the stamens with a ring of white connivent hairs that close over the stamens as these last do over the stigma, the mouth pentagonal, with a shallow, 2-lobed, crested, whitish process between each segment analogous to the crown in *Nerium* &c., combined downwards into as many pale plaits or angles of the tube. *Stamens* inserted below the middle of the tube; *filaments* short, greenish, curiously jointed or geniculate at a very acute angle on their small columnar or bracket-like hairy base, beyond which they soon dilate into an obovate nectariferous concavity, bearing the erect 2-celled *anther*, the cells oblong, distant on the under and exterior margins of the broad, membranaceous, rounded connectivum, which is villous at the back and converges into the stigma, the entire set nearly closing the tube of the corolla; *pollen* of many pellucid globules, cohering in masses, deposited from the incumbent anther-cells on the peltate disk beneath the stigma, which is not orange-coloured as in *V. major*. *Style* terete, enlarged gradually upwards and bearing a thin, circular, discoid gland grooved like a pulley, ciliated and nectariferous, the upper side of which is continued into a very short, stout, tapering column carrying the peltate stigma, that consists of beautifully white radiating hairs forming a dense circular tuft, not 5-angled or plaited as in the other species. *Ovary* partly embraced by the base of the calyx, compressed, 2-lobed by a lateral furrow, against which is applied on either side an oblong, greenish yellow, nectariferous gland as long as the ovary. *Follicles* seldom produced either in this country or on the Continent, glabrous, geminate, occasionally connate, mostly unequal in size, one of the pair either much reduced or abortive, parallel or diverging, from about half an inch to an inch in length, oblong or sublanceolate, sulcate-striate and tereti-angular, more or less beaked, the apex straight or a little curved; bursting along their inner side. *Seeds* one or two, elliptical-oblong, subcylindrical, with a deep channel along one side, formed by the inflexion of the pale cartilaginous albumen upon the line of

placentation, which is parallel to and close upon the sutural margins; dull rusty brown, rugose, scabrous-punctate and cellular. *Embryo* in the axis of the seed, linear, straight or a little curved.

This species, which I believe to be the only truly British *Vinca*, is very common in the Hampshire woods, preferring a chalky soil and the sunny borders of the copses; it is also generally dispersed over the country, as well as a great part of Europe. It is indigenous throughout central Europe, and in Russia as far N. as Moscow.

A third species of *Vinca*, *V. herbacea*, a native of Austria, Hungary and Russia, is sometimes seen in gardens.

Order L. GENTIANACEÆ, *Juss.*

"*Calyx* divided, persistent. *Corolla* usually regular and persistent, the limb generally with an imbricated and twisted, rarely with an induplicate æstivation, 4-, mostly 5-, 6-, 8-, or 10-lobed. *Stamens* as many as the lobes of the corolla. *Ovary* 1—2 celled, many-seeded. *Styles* 1 or 2. *Stigmas* 1—2. *Capsule* (or berry) generally 2-valved; the margins of the valves turned inwards and bearing the seeds, where there is one cell; in the 2-celled genera the margins meet in the axis. *Albumen* fleshy. — *Mostly* herbaceous, *generally* glabrous plants, *with* opposite (rarely alternate) leaves and no stipules, *eminently* bitter and stomachic."—*Br. Fl.*

I. CHLORA, *Linn.*

"*Calyx* of 8 deep segments. *Corolla* nearly rotate. *Stamens* 8. *Style* 1, deciduous. *Stigmas* 2, bifid. *Capsule* 1-celled, 2-valved, many-seeded."—*Br. Fl.*

1. *C. perfoliata*, L. *Perfoliate Yellow-wort. Yellow Centaury.* "Leaves connate-perfoliate ovate glaucous."—*Br. Fl.* p. 268. *E. B.* t. 60.

In woods, pastures, on banks and cliffs by the sea; very frequent, growing on the wettest clay or the driest chalk. *Fl.* June—September. ☉.

E. Med.—Frequent on the slipped land along the shore on either side of Ryde, and amongst brushwood on the sea edge of Quarr copse. In Sandown bay, Luccombe chine and East-end, frequent. Banks near Cowes. Shanklin, in plenty. Ventnor cove, *Mr. Snooke*. Roadside between St. Lawrence and Shanklin, *Mr. E. Forster, jun.* In the field below Uplands on the West side, very abundantly, *Dr. Bell-Salter*.

W. Med.—Hedgebank near Tapnell farm. Plentiful on the slipped land of the shore below Burnet wood, &c. Plentiful in many places about Freshwater, and along the cliffs above Alum Bay. Plentiful in Thorness wood, and all over young plantations ascending the hill to Mrs. Nash's at Hampstead. Colwell. Carisbrooke castle.

A glaucous herb, quite smooth and glabrous throughout. *Root* annual, whitish, brittle, rigid and tapering, more or less branched with long, slender, flexuose fibres. *Stem* in the smaller plants usually solitary and simple or nearly so below, in the larger often two or more and branching sometimes from the base, erect, from about 4, 6, or 8 to 18 or 20 inches high, terete, filled with a loose cellular tissue, firm, rigid, and a little waved, of a pale green and shining, but dulled by a glaucous bloom easily rubbed off. *Leaves* firm, smooth, fleshy, radical ones

crowded into a cæspitose tuft (rosulate), and wholly or in part decaying before the plant comes into flower, smaller than those on the stem and of a paler yellowish green, ovate, ovate-elliptical or elliptical-oblong, obtuse or pointed, attenuated into a short petiole; *cauline leaves* distant, opposite, sometimes, according to Bertolini (Fl. Ital. iv. p. 311), ternate and verticillate, completely connato-perfoliate, * very broadly ovate, acute or somewhat acuminate, mostly curving upwards, with their points erect, the central leaves the largest, dull yellowish green, with a glaucous bloom, 3- or obscurely 5-ribbed. *Stipules* none. *Flowers* in a terminal repeatedly di-trichotomously forked panicle at the summit of the stem and branches; divisions of the panicle erect, with a pair of leaves at each bifurcation. *Peduncles* erect, ebracteate, single-flowered. *Calyx* cleft either quite or nearly to the bottom into 8 subulate, very acute or somewhat awned segments, which are rounded or convex at the back, with a single prominent keel-like rib, concave in front, with thin, narrow, membranous edges. *Corolla* longer than the calyx, sometimes an inch or rather more in diameter, usually about the size of a shilling, the limb rotate, cleft into 8 ovate or ovate-elliptical, obtuse or subacute, spreading segments, of a bright golden (or sometimes palish) yellow, greatly exceeding the short, obscurely quadrangular, membranous tube, entire or not unfrequently notched at the apex, persistent and spirally conduplicate on the top of the ovary after flowering, which last is covered with the now much-distended delicately transparent tube, like a fine pellicle. *Stamens* inserted on the top of the tube and between the segments of the limb, shorter than the latter; *filaments* equal, flattish and tapering, bright yellow; *anthers* erect, not spirally twisted after flowering, glabrous, but at length becoming invested with woolly filaments.† *Germen* (ovary) as long as the tube of the corolla, elliptical-oblong, obtusely quadrangular, with a deep furrow along two opposite faces (sutures), full of a greenish yellow very glutinous but scarcely bitter juice. *Style* short, quadrangular, more or less deeply bifid, each division emarginate and bearing on their outer face the heart-shaped, glandulose, pilose, yellow stigma. *Seeds* numerous, very minute, yellowish brown, irregular, ovate or oblong, covered with large, deep, angular excavations.

This is one of our most beautiful native plants, not rare in England and Ireland, though unknown in Scotland in the wild state. The golden yellow flowers expand only in sunshine or a strong light, closing early in the afternoon (about 2 o'clock) for the rest of the day, and not unfolding again until the following morning. When a handful of the plant is gathered and placed in water, its beautiful blossoms will continue to open and close at the accustomed hour for several successive days; when once shut, exposure to the sun's rays proves insufficient to stimulate them to expand a second time, till the usual period of repose has elapsed.

II. ERYTHRÆA, *Renealm.* Centaury.

"*Calyx* 5-cleft. *Corolla* funnel-shaped, withering, its limb short. *Anthers* at length spirally twisted. *Style* 1, deciduous. *Stigmas* 2. *Capsule* linear, 2-celled."—Br. Fl.

1. *E. Centaurium*, Pers. *Common Centaury*. "Stem nearly simple, leaves ovate-oblong, flowers nearly sessile fasciculate-pani-

* In a small specimen I have seen from Cheshire the leaves are quite distinct and cordate at base, being probably the var. *β. minor* of DC. and var. *β. pusilla* of Gaudin.

† These woolly filaments seem rather to belong to the style, and to adhere casually only to the anthers. They appear to proceed from the splitting of the exterior (vascular?) coat of the style and stigmas into a multitude of capillary fibres, varying in amount according to the advanced state of the ovary.

culate, calyx half as long as the tube of the opening corolla." — *Br. Fl.* p. 266. *Gentiana*, *E. B.* t. 417.

β. Flowers white.

In dry pastures, woods and bushy heathy places; very common. *Fl.* June—August. ☉.

δ. Found occasionally in various places. Near Thorley, &c. Pastures on the S. of Newport, *B. T. W.*

Capsule pale yellowish brown, about 4 lines in length, narrow-oblong or sub-linear, obtuse, apiculate with the base of the style and bluntly prismatic, with a deep furrow along the marginal suture of the much-inflexed valves, greatly (nearly twice) longer than the calyx, closely sheathed in the dry persistent corolla, which prevents the separation of the valves to their base. *Seeds* very numerous and minute, pale brown and pellucid (in the aggregate coffee-coloured), of a roundish more or less angular shape, covered with sharp wrinkle-like ridges forming a coarse kind of network, the interstices appearing finely dotted under a high magnifier.

2. *E. pulchella*, Hook. *Dwarf Centaury*. Stem forked variously branched or (more rarely) simple winged, leaves ovato-oblong 5-nerved, flowers pedicellate, calyx nearly as long as the tube of the corolla. *Br. Fl.* p. 266. *Chironia*, *E. B.* t. 458. *Fl. Dan.* x. t. 1637.

In dry sandy or gravelly fields, pastures and waste places; not unfrequent, but I think probably a variety of the preceding. *Fl.* July—October. ☉.

E. Med.—At Ryde, Isle of Wight, *Mr. S. Woods* in *Bot. Guide*. [*St. Helens* spit; above White-cliff bay; very frequent about Bembridge: *A. G. More, Esq.* —*Edrs.*]

W. Med.—Above the shore to the W. of Yarmouth. Freshwater village, *Rev. G. E. Smith*.

It is very doubtful whether this be really distinct from *E. Centaurium*; I find the relative length of the calyx and corolla to vary on the same plant, and I fear the other characters have no greater permanency.

3. *E. littoralis*, Hook. *Dwarf Tufted Centaury*. "Stem simple or branched, radical leaves crowded spatulate, cauline ones oblong linear obtuse, flowers sessile capitato-paniculate, calyx as long as the tube of the opening corolla deeply cleft." — *Br. Fl.* p. 267. *E. linarifolia*, *Pers.* *Chironia littoralis*, *E. B.* t. 2305.

On sandy shores and banks by the sea; perhaps not unfrequent, but very doubtfully distinct from the two foregoing species. *Fl.* June—August. ☉.

W. Med.—Alum bay, between Groves's hotel and the sea, *Dr. Martin!!!* Headen hill, within 20 yards of Mr. Ward's cottage, *Miss G. Kilderbee!!!*—I am not certain that the specimens from this station were not a broad-leaved variety of *E. pulchella*. Sea-banks near Compton, *B. T. W.*

III. GENTIANA, Linn. Gentian.

"Calyx 4—5 cleft. Corolla subcampanulate, funnel- or salver-shaped, tubular at the base, destitute of nectariferous glands. Stamens 5. Styles persistent, often combined. Capsule of 1 cell, 2-valved." — *Br. Fl.*

Flowers usually blue or purple, more rarely white or yellow; handsome. The far greater number of the species inhabit lofty mountain regions; a smaller proportion are limited to hilly situations, whilst a few are found in low and even marshy places at the sea-level in colder latitudes.

1. *G. Amarella*, L. *Autumnal Gentian*. "Stem much-branched, root-leaves oval spatulate, upper ones ovate-lanceolate sessile, calyx-lobes lanceolate nearly equal shorter than the tube of the corolla which is cylindrical or obconical, its limb 5-cleft, germen linear-oblong and as well as the capsule sessile or shortly stipitate."—*Br. Fl.* p. 268. *Sm. E. Fl.* p. 30. *Lindl. Syn.* p. 179. *E. B.* iv. t. 236.

β. Calyx-segments very unequal.

On dry hilly and chalky pastures and downs in many places. *Fl.* July—November, sometimes in early summer (May, &c.). ☉.

E. Med.—Binstead, sparingly. Near Arreton. East-end. Landslip at Bonchurch, *Samuel Hailstone, Esq., jun.*

W. Med.—White Pit, by Newport, abundantly. Plentiful all round Carisbrooke castle, on the turf of the moat, glais, &c., where it was pointed out to me by *Mr. Snooke, jun.* In and about the chalk-pit opposite Alvington farm, by the road from Carisbrooke to Calbourne, plentifully. In the park at Swainston. Abundant on the down above Alum Bay. Near Westover. Banks between Norton and Totland. Shide chalk-pit, and on all the chalky downs throughout the island, *Mr. W. D. Snooke*.

β. On the dry chalky down above Sandown bay.

Root yellowish white, very stiff and contorted. Stem purple, much branched, from a few inches to a foot high, roundish, with two prominent ribs or wings on its opposite sides, continued alternately to the summit, giving it the appearance of being quadrangular. Leaves dark somewhat purplish green, opposite, sessile, ovate-lanceolate, acute, quite entire, 3-ribbed, the lowermost obtuse and attenuated into short footstalks. Flowers axillary and terminal, usually 2 or 3 together, nearly an inch long, stalked, erect, purplish or violet, elegant though not showy. Sepals nearly equal, linear-lanceolate, acute, their edges revolute, shorter than the tube of the corolla and erect. Corolla somewhat campanulate, the limb in 5, or occasionally in the same specimen in 4 (or even 3, *Sm.*), ovate, acute, spreading segments, the mouth of the tube beautifully fringed with long, erect, purplish hairs. Stamens inserted at the very base of the corolla, but adnate with it for nearly half their length; filaments dilated in the middle; anthers 2-celled, purple, free. Germen linear. Styles very short; stigmas 2 upright flattened lobes. Capsule linear, cylindrical, yellowish, enclosed in the permanent withered perianth, opening to a short distance only from its apex. Seeds numerous, very small, roundish oval, pale brown and shining, finely punctate all over, attached in a single row on either side of each valve near the commissure.

A variety with the calyx-segments very unequal, two of them considerably larger and longer than the three others, but neither ovate nor concealing the latter as in *G. campestris*, I found on the dry chalk down above Sandown bay. Some of the lower flowers had the calyx 4-cleft; in these the difference of size in each alternate segment was very conspicuous, the smaller, shorter and inner being linear, the outer and longer ovate-lanceolate. Are these two species really distinct?—the descriptions of authors point at intermediate forms that militate against the opinion that they are so.

? *G. campestris*, L. *Field Gentian*. "Stem very much branched many-flowered, leaves ovate-lanceolate, 2 outer segments of the calyx very large ovate, corolla 4-cleft."—*Br. Fl.* p. 268. *E. B.* t. 237.

On dry elevated gravelly or chalky pastures and limestone hills; probably never found at all in this island. *Fl.* August—October. ☉.

Heathy pasture between Colwell and Weston, plentifully, *Mr. W. D. Snooke*. I have not succeeded in finding the plant in the above station, nor have I ever seen Isle-of-Wight specimens from that or any other locality. I fear the last species has been mistaken for it;—possibly the variety just described.

IV. MENYANTHES, Linn. Buckbean.

"*Calyx* 5-partite. *Corolla* funnel-shaped, fleshy, the segments hairy within. *Stamens* 5. *Stigma* 2-lobed. *Capsule* 1-celled, 2-valved; *valves* bearing the *seeds* along their middle; *seeds* parietal."—*Br. Fl.*

1. *M. trifoliata*, L. Buckbean or Bogbean. Marsh Trefoil. *Br. Fl.* p. 269. *E. B.* t. 495.

In spongy peaty bogs, drains, ditches, watery meadows and swampy thickets; not uncommon. *Fl.* May—August. *Fr.* June, &c. 24.

E. Med.—On Sandown level, but sparingly. Wet pasture a few hundred yards above Alverstone mill, plentifully; and in Alverstone lynch. [The bog by Burnthouse, Dr. Bell-Salter, Edra.]

W. Med.—In the wet thicket by the stream-side between Newbridge and Calbourne, sparingly. Abundantly on moory meadows between West Court and Sandy Way, Shorwell. About Freshwater, on Schoolhouse farm and near Thorley. On the boggy part of Colwell heath. Wet pasture on Kingston moors. In the marsh near Compton, and marsh near Easton in great abundance, *B. T. W.* Boggy meadows by the Medina near its source.

Villarsia nymphæoides, Vent., grows in a pool on Barrett's common, 2½ miles from Ryde, — *Collins, Esq.*, July, 1846. Certainly introduced, Dr. Bell-Salter thinks probably by himself, though he has no recollection of having done so with this particular species.

Order LI. CONVULVULACEÆ, Juss.

"*Calyx* of 4—5 sepals, permanent, imbricated, often very unequal. *Corolla* regular, deciduous; the *limb* plaited, 4—5 lobed. *Stamens* 4—5 from the base of the corolla. *Ovary* with 2—4 cells, seldom 1, sometimes in 2 or 4 divisions, few-ovuled, ovules solitary in each cell or collateral. *Style* 1, often divided, rarely 2. *Disk* annular, hypogynous or wanting. *Capsule* 1—4 celled, the valves fitting at their edges to the angles of a loose dissepiment, bearing the *seeds* at the base, or bursting transversely. *Albumen* in small quantity, mucilaginous. *Embryo* curved. *Cotyledons* plaited. — Herbs or shrubs, generally climbing, milky and purgative."—*Br. Fl.*

I. CONVULVULUS, Linn. Bindweed.

Calyx 5-sepaled. *Corolla* campanulate, plicate. *Stigmas* 2. *Capsule* of 1—3—4 cells, with as many valves. *Cells* 1—2 seeded."—*Br. Fl.*

* *Bracts* small, remote from the flower.

1. *C. arvensis*, L. Small Bindweed. "Stem prostrate twining or scandent, leaves usually oblong or hastate sagittate pointed or obtuse, the lobes mostly acute, peduncles 1- or 2-flowered, bracts small distant from the flowers."—*Br. Fl.* p. 271. *E. B.* t. 312.

β. Corolla with a dentate ring of rich purple within towards the base.

In waste and cultivated ground, cornfields, gardens, on hedgebanks, by waysides and under walls, &c.; far too abundantly. *Fl.* June—September. *Fr.* October. 24.

β. Along a hedge in Monckton street, Ryde (flowers the usual rose-colour). Cornfield between Newchurch and Lower Knighton, in plenty (with the corolla pure white). I find this var. between Quarr abbey and Fishbourne, and it is probably frequent in other places. Sometimes the ring is very faintly marked.

Root long, extensively creeping (descending remarkably deep, *Bab.*), pale brown, fleshy. *Stems* numerous, either trailing on the ground, twining about the stalks of corn, or scandent in hedgerows, &c., usually about 2 or 3 feet long, when climbing over bushes considerably exceeding those dimensions, twisted, with 4 slightly winged angles, branched chiefly at the base, very leafy, a little milky, smooth. *Leaves* alternate, dull grayish green, scarcely paler beneath, the margins slightly deflexed, somewhat fleshy, more or less downy or quite glabrous, extremely variable in size and shape, mostly oblong-hastate or sagittate, pointed or very obtuse and rounded, the lower leaves usually truncate at the base; lobes shortish, more or less acute, sometimes obtuse, very small and even obsolete, diverging at right angles for the most part or nearly so. *Petioles* much shorter than the leaves, rounded or semiterete, deeply caniculate above. *Flowers* delicately fragrant, closing in the afternoon or in rainy weather. *Peduncles* axillary, mostly single, often 2- or sometimes even 3-flowered, occasionally a little branched, slightly enlarged upwards, acutely quadrangular, their summits deflexed in fruit. *Calyx* very small, as long as the tube of the corolla; sepals imbricated, broadly oblong-obovate, very obtuse, with a minute brown point, obscurely nerved, the 2 exterior shortest, with narrow scarious borders, the 3 interior membranous at the summit and emarginate. *Corolla* broadly and flatly funnel-shaped, from 1 to 1½ inch wide, somewhat pentagonal, the margins crenulate, extremely variable in colour, of every shade from vivid rose or peach-blossom red to nearly pure white, with 5 tapering plaits or angles of a reddish fawn-colour at the back, the narrower part of the limb white, with 5 or 10 more or less distinct bands or spaces radiating towards the border, often with a zigzag or dentate ring of deep crimson internally a little above the very short yellowish tube. *Stamens* erect; *filaments* tapering, glandulose-pilose below; *anthers* sagittate, white, the sutures purplish. *Germen* conical, bluntly lobed, surrounded by a thick, fleshy and lobed fillet, of an orange-yellow colour. *Style* long, white, glabrous; *stigmas* white, papillose, cylindrical or subclavate, mostly curved upwards, spreading or divaricate. *Capsule* pale whitish brown, glabrous, roundish ovoid, somewhat acute or even acuminate, mucronate, faintly 2-, 3-, or 4-lobed, with as many rounded angles, almost perfectly 2-celled, the dissepiment stretching quite across and reaching to within a very little distance from the top. *Seeds* 2, 3, or 4 (commonly 4), ovoid or subtrigonal, gibbous at the back, deep rust-colour, scabrous* and covered with prominent points.

The very grateful but somewhat transient fragrance of the flowers, resembling that of almonds, is rarely possessed by other species of this beautiful genus. But not this attraction, superadded to their elegant and often vivid colouring, can reconcile the plant to the eye of the farmer, or cause him to regard it in any other light than as a worthless intruder, mocking his efforts for its extirpation, or deriding his sloth negligence or bad management by its specious but profitless luxuriance. No weed obnoxious to the husbandman maintains its ground more obstinately than this, or requires greater exertion to keep it under, which deep ploughing perhaps alone can effect: to subdue it entirely is almost hopeless, since every inch of the perennial root left in the soil will vegetate afresh; and even when eradicated from a field an abundant supply is always at hand to creep in, from the adjacent banks or hedgerows, to overrun it anew. In N. Britain its comparative infrequency renders it harmless; with us its natural prevalence

* Glabrous, according to Bertoloni, whose description of the capsule is incorrect in many points.

becomes oppressive exuberance when not kept within bounds by such agricultural improvements as are yet but very partially to be seen in operation on this side of the Solent. It has gained footing in the more northern States of America, but not as yet to any injurious extent; I observed it frequently about Boston, where the native plants have mostly given way before intruders from a foreign soil, the land from whence migrated the adventurous dispossessors of her ancient warrior tribes.

**** Bracts foliaceous, enclosing the calyx.** *Calystegia*, *Br.*

2. *C. sepium*, L. *Great Bindweed*. * *Bearbind*. Vect. *Hedge Lily*. "Stem climbing, leaves sagittate, their lobes truncate, peduncles 4-sided single-flowered, bracteas heart-shaped, stigmas short and obtuse." — *Br. Fl.* *E. B.* t. 313. *Calystegia*, *Br.* : *Br. Fl.* p. 271.

β. Flowers pale rose or blush-colour.

γ. Corolla deeply 5-cleft almost to the base.

Everywhere extremely common in moist thickets, hedges and amongst bushes, in osier-beds, damp gardens and shrubberies. *Fl.* June—October. *Fr.* September? October. 24.

β. A few plants by the roadside a little before coming to Shanklin from Sandown. On wet slipped land amongst bushes above the shore a little to the eastward of Old Castle Point, in some abundance; also between Dean farm and Whitwell, in a willow-plot; and near Roud. With leaves a little fleshy, by the shore to the N. of Shanklin chine. At Lower Knighton, *E. Vernon, Esq.* Near Newchurch, *Dr. Bell-Salter!!!* On the sea-shore at the North-western extremity of the Priory grounds, *idem*. In a large willow-bed between Compton and Dunsbury farms, a little N.E. of Compton grange, in considerable plenty. East bank of the Yar, along the edge of Beckett's copse.

γ. A single plant in the hedge by the gardener's cottage at St. John's. Smith in *E. B.* mentions a similar var. of *C. arvensis*, noticed by Ray and by himself at Norwich.

Root long, white, slender, fleshy and cylindrical, branched and creeping horizontally to a great extent, throwing out occasional bundles of thready fibres and fresh stems. *Stems* climbing and twining over hedges, &c., to the length of many feet, slightly branched, a little downy and angular and partly twisted, green or reddish, milky. *Leaves* alternate, bright green, petiolate. *Capsule* pale brown, tipped with the hard and pointed remnant of the style, roundish, obscurely 3- or 4-angled, with as many indistinct lobes, 1-celled, equally divided its entire depth by an imperfect dissepiment not closing up the centre. *Seeds* either 3 or 4, blackish brown, large and angular, smooth, placed round a short central receptacle at the bottom of the capsule.

Both Smith and Wahlenberg profess never to have seen the capsules, which indeed are not very commonly produced. I have however met with them abundantly in Whitefield wood, as also about Hastings, and at Hampstead, near London.

This common and conspicuous ornament of our hedges may vie with many exotic species in the amplitude and graceful structure of its fine white flowers, which continue to adorn the rural districts, and even the outskirts of our towns, almost to the end of autumn. Though occasionally straying into the damp corn-field, its trespasses are too insignificant to attract the notice or incur the proscription of the agriculturist; it is however apt to prove a troublesome inmate of moist

* The leaves of the Greater and Lesser Bindweed afford nourishment, in its larva state, to the *Convolvulus* hawk-moth (*Sphinx Convolvuli*, L.), the imago of which fine insect occurred in unusual numbers over a great part of England in the autumn of 1846, when many specimens were captured at Ryde, Ventnor, Brixton, Niton and elsewhere in this island.

gardens and shrubberies, where its presence is usually regarded as less ornamental than obtrusive.

Of the var. β . the flowers are in this island rarely more than suffused with a faint blush of red, but in some parts of England they are found deep rose-coloured, and I have myself gathered them so in Guernsey. A similar variety appears to be the commoner American form of this widely diffused species, which under the foregoing or following states is indigenous over a great part of both hemispheres. In America the lobes of the leaves are often rounded or angular, but not decidedly truncate; the leaves, petioles and stems either wholly or partially hairy, and the bracts, I think, rather shorter in proportion to the tube of the corolla than in the European plant. In this state it is the *C. repens* of Linnæus, &c., and which I have gathered abundantly on the banks of the Savannah river, a little below the city, with both white and blush-coloured flowers, but excepting in the above particulars I find nothing to distinguish it from the ordinary European form of *C. sepium*.

3. *C. Soldanella*, L. *Sea-side Bindweed. Scottish Scurvy-grass. Sea Colewort.* Vect. *Scurvy-grass.* Leaves kidney-shaped somewhat angular fleshy, peduncles single-flowered square slightly winged at the corners and thickening upwards, bracts close beneath the flower large ovate, seeds glabrous. *E. B. t.* 314. *Calystegia*, Br.: *Br. Fl.* p. 271.

On the sandy or shingly sea-beach, but not commonly. *Fl.* July, August. *Fr.* September. 24.

E. Med.—Spit at St. Helens, in some abundance. Lower end of Sandown bay, towards Shanklin, sparingly. On the Dover spit at Bembridge the plant has more of the trailing habit of *C. arvensis*, the stems being sometimes above 2 feet in length, but the flowers are produced more sparingly.

W. Med.—Plentifully in the loose sand on Norton spit.

Root (or rather rhizoma) white, fleshy, slender, cylindrical, scarcely branched, running pretty far into the loose sand or shingle. *Stem* one or two, simple or a little branched, seldom above a span long, often only 2 or 3 inches, quite prostrate or trailing, leafy, purplish, with several slightly winged angles and full of a milky juice. *Leaves* alternate, yellowish green, strongly veined, very smooth and shining, fleshy, sprinkled on both sides with depressed dots, on round channelled foot-stalks twice or thrice their own length, cordato-reniform or orbicular-reniform, very obtuse, with a minute point, more or less bluntly angular, and very like the leaves of the common Scurvy-grass (*Cochlearia officinalis*), for a species of which it is taken by the ignorant here and in other parts of the country. *Flowers* solitary, on square axillary peduncles that are longer than the leaves and with their angles slightly winged, the size of those of *C. sepium*, pale purplish rose-colour with 5 yellowish plaits, very handsome but fragile, and quickly fading when gathered. *Bracts* 2, closely embracing the calyx, broadly ovate, keeled, edged with a narrow scarious border, very obtuse, emarginate, the inner one as long as the calyx, the outer a little shorter and auricled at the base. *Sepals* very unequal in breadth, ovato-elliptical, apiculate, very blunt, the 2 outer much larger and roundish. *Stamens* whitish, their *filaments* much dilated and glanduloso-pilose in their lower part; *anthers* pale, erect. *Style* rather longer than the stamens, cylindrical, enlarged beneath into the conical 2- or 4-lobed germen, which is seated on and partly enclosed in a yellow lobed and fleshy gland; *stigmas* 2 oblong, very rough, nearly erect lobes. *Capsule* enclosed in the calyx and bracts, large, brownish, subglobose, splitting very irregularly, obtusely 3- or 4-lobed and angled, mucronate, 2-, 3-, or 4-seeded. *Seeds* large, bluntly triquetrous, smooth and black, one or two often abortive. Sometimes the capsule is monospermous.

The long, creeping and tenacious roots assist, with other plants of more homely aspect but greater efficiency, in binding the loose and drifting sand, the barren monotony of whose level surface is softened, if not concealed, by the abundance and delicate colouring of its reclining bells.

The observation of Smith, that the flowers of this species expand only in fine weather and in the early part of the day, does not accord with my own. I find, on the contrary, that neither wet, nor total deprivation of light in close tin vessels, has any tendency to produce collapse in the blossoms, which in their native soil continue expanded all day, and, if not during the night, as they certainly do when taken up, at least until a very late hour.

The stigmas are most erroneously described in 'English Botany' and in the 'English Flora' as short, awl-shaped and acute, the description having been obviously drawn up from specimens in which the lobes had fallen away, leaving only their points of attachment remaining. The large plaited cotyledons, with the curved embryo lying between them, the radical directed towards and attached to the hilum, and both enclosed in a bag of thin tough albumen, are beautifully displayed in the unripe seed on removing the testa, which peels off as readily as the shell from a hard-boiled egg. Sir W. Hooker has remarked the flowers to be fragrant in Jersey.

In collecting a considerable quantity of the fully ripe seeds at Norton, in September, 1842, I remarked that the greater part of those gathered in the capsule were more or less villous, and some quite tomentose, as they are said to be in a closely allied Neapolitan species, *C. Imperati*. Such as had fallen from the capsules, and were lying on the sand, were for the most part glabrous, and from the others the tomentum was easily detached by slight friction. Whether this appearance was natural, or the result of mouldiness contracted through a want of free circulation of air in the capsules, I am unable to say: both the soil and the season were unusually dry and warm. I state the fact to draw the attention of others to the subject.

Order LII. CUSCUTACEÆ.

"*Calyx* inferior, persistent, 4—5 parted, with an imbricate æstivation. *Corolla* persistent, cut round at the base; the limb regular, 4—5 cleft, imbricated in æstivation. *Scales* alternating with the segments of the corolla, and adhering to them. *Stamens* equal to the segments of the corolla and alternate with them; anthers 2-celled, opening longitudinally. *Ovary* 2-celled, ovules twin, collateral, erect. *Styles* 2 or 0, sometimes connate; stigmas 2. *Fruit* capsular or baccate, 2-celled; cells 1—2 seeded. *Seeds* with a fleshy *albumen*, and spiral, filiform, *acotyledonous embryo*; *radicle* inferior.—Leafless, climbing, colourless parasites, with the flowers in dense clusters."—*Lindl. Veg. Kingd.*

I. CUSCUTA, *Linn.* Dodder.

"*Calyx* 4—5 cleft. *Corolla* campanulate, 4—5 lobed, the tube usually furnished with scales on the inside. *Styles* 2 (rarely united). *Ovary* 2-celled, 4-ovuled. *Capsule* bursting all round transversely at the base, 2-celled."—*Br. Fl.*

Parasitical leafless and succulent herbs, with twining filiform stems, found in all quarters of the globe, of which Europe possesses at least four and Britain three species, remarkable rather for singularity than beauty. The Indian or Chinese Dodder is sometimes seen in conservatories.*

* One European species of Dodder, *C. lupuliformis* (*C. monogyna*) is parasitic on Willows, and several tropical species infest trees to which they are very injurious. I remarked them to be extremely common in the W. Indian Islands, and

1. *C. europæa*, L. *Greater Dodder*. Stem branched, heads sessile many-flowered bracteated, tube of the corolla very short about equal to the erect bluntish calyx-teeth, scales at the base of the stamens very small erect or appressed not closing the tube, stigmas simple. *Sm. E. Fl.* ii. p. 24. *Br. Fl.* p. 271. *Lindl. Syn.* p. 168. *E. B.* vi. t. 378. *Babing. Linn. Trans.* xviii. p. 213. fig. 1.

Parasitic on the stems of various herbaceous plants; extremely rare in this island. *Fl.* July—September. ☉.

E. Med.—On wild Hop, Nettles and Thistles (*Cnicus arvensis*) in a hedge between Kerne and Alverstone mill, *Dr. Bell-Salter*, Sept. 1840 !!!—very abundant there in 1841. Near Lake, Isle of Wight, *Mr. J. Woods, jun.*, in *Bot. Guide*.

W. Med.—On vetches in a field at Bouldner, *Mr. R. Gibbs*, 1848 !!!

A larger and more robust plant than the next species, the stems usually of a less lively red (though, as in that, very variable in colour and sometimes pale); often as thick as packthread, angular, succulent, much branched, matted and twining inextricably around the adjacent plants, from which it derives nourishment and support, to the height of 2 or 3 feet, adhering to them at each circumvolution by small fleshy tentacula or suckers protruded from orifices in the stem, which is itself firmly applied by the membranous and tubercular expansion of its angles at the points of contact. *Flowers* white, honey-scented, about the size of the next, quite sessile, in small, globular, lateral clusters, that are at first scarcely larger than peas, but in fruit are the size of musket-bullets, each cluster having a small ovate bract beneath it, and whence the branches of the stem originate. *Calyx* funnel-shaped, scarcely shorter than the tube of the corolla, cleft about $\frac{1}{3}$ rd downwards into 4 or 5 broadly ovate, erect, bluntish segments, more or less tinged with rose-red. *Corolla* tubular or subcampanulate, of delicate, pellucid, cellular tissue, 4- or 5-cleft in the same head or cluster (mostly the latter), the segments ovato-triangular, bluntish and spreading, about as long as the short, inflated and finally globose tube. *Stamens* 4 or 5, inserted between the segments of the corolla at their base, on short, connivent, flattened filaments, which are much dilated downwards, each with a small, narrow, jagged or forked crystalline scale at its base, but which is far less conspicuous than in the next species, not, as in that, closing the throat of the corolla, but shorter and somewhat erect or even appressed,* and hence very liable to be overlooked even in the fresh plant; anthers brownish, roundish cordate, 2-lobed, bursting laterally. *Germen* globose. *Styles* 2, greenish, erect, much shorter and thicker than in the following species, variable in length, but seldom equalling, and mostly much shorter than, the stamens; stigmas blunt, fleshy and yellowish. *Capsules* the size of hemp-seed, membranous, subglobose or obscurely quadrangular, invested with the tunic-like persistent and enlarged corolla, bursting all round near the base. *Seeds* 4, brownish or reddish, roundish or somewhat ovate, finely scabroso-punctate, with a sort of slight chafy scaliness, attached two on each side of a transverse dissepiment, fixed on the base of the capsule, but unconnected with it above, and emarginate at the summit, dividing the cavity into a pair of imperfect cells. *Embryo* monocotyledonous, cylindrical, in a loose spiral about the albumen.

particularly in Grenada, where I observed one species to attach itself indiscriminately to almost every kind of tree and shrub, investing them with a dense mass of tangled fibres, like hanks of yellow yarn, and giving them a very singular but unsightly appearance.

* The existence of these scales in *C. europæa* has been a subject of controversy, some authors admitting and others denying their presence. The truth is, these scales in the present species are not easily seen, from their small size and great transparency, but are always visible on close examination under a high magnifier, and in a favourable light.

2. *C. Epithymum*, L. *Lesser Dodder*. Vect. *Maidenhair*. "Styles exserted, heads of many small flowers bracteated sessile, corolla with a cylindrical tube longer than the campanulate calyx, 'scales converging as long as the tube of the corolla fimbriated and rounded, at the end approximate below with narrow acute spaces.'" — *Br. Fl.* p. 272. *E. B.* t. 55. *Babing. in Ann. and Mag. of Nat. Hist.* for July, 1845, p. 1, tab. 1, fig. 2 (dissection of fl.)

On Furze, Thyme, Ling, Heath and other small mostly shrubby plants, especially the first of these species, on commons and open exposed pastures; often abundantly. *Fl.* July—October. ☉.

E. Med.—By the beach at Sandown. On Head Down, near Niton. On *Gallium saxatile* and *Erica cinerea* by the roadside over Bleak Down to Newport. The profusion with which it invests the furze on Stapler's heath, near Newport, as with entangled skeins of silver thread, cannot fail to arrest the attention of the most incurious. On St. George's down, *G. Kirkpatrick, Esq.* In Blackgang chine, abundantly, — *Gray, Esq.*, of the Brit. Museum, 1844.

W. Med.—On Colwell heath. Plentiful and very fine on Ningwood common, between Yarmouth and Shalfleet. Near Bouldner and on Mottestone down, *Rev. James Penfold*. "Matted densely upon mingled *Calluna* and Lichenes on Headen hill," *Rev. G. E. Smith* in litt. Abundantly on Buccombe down.

Stems filiform, inextricably entangling themselves with the plants upon which they grow, of every shade of red, crimson or purple. Flowers in dense sessile clusters, delicate white or rose-coloured, exquisitely diaphanous under a lens, very clammy and sweet-scented, from the quantity of honey they secrete, nearly all 5-cleft and pentandrous in my specimens from Ningwood, with an occasional 4-cleft one interspersed. Throat of the corolla closed at bottom with beautiful, connivent, jagged and crystalline scales, admitting between them the purplish upper half of the styles to pass.

†3. *C. Trifolii*, Bab. *Clover Dodder*. "Styles exserted, heads of small flowers bracteated sessile, 'tube of the corolla cylindrical, the scales converging half as long as the tube of the corolla fimbriated and rounded at the end distant below with rounded spaces, calyx narrowed below as long as the tube of the corolla.'" — *Br. Fl.* p. 272. *E. B. S.* t. 2898.

In clover-fields, appearing to have been recently introduced, and as yet rare in this island. *Fl.* July—September. ☉.

W. Med.—Abundantly in a clover-field by Thorley farm, *Mr. Robert Gibbs*, 1842 !!! Also in another field not far from Yarmouth mill, but on the opposite side of the river, very sparingly, 1843, *Mr. George Gibbs* !!!

Specimens of this plant collected in a clover-field near Thorley, Sept. 1844, approach more nearly to *C. Epithymum* than others from a neighbouring field, gathered the year before, in having the calyx for the most part much shorter than the tube of the corolla: but I find the relative proportion between them liable to great variation, the calyx in some flowers being scarcely more than half, in others almost quite, equal to the tube; the breadth and degree of acumination in the segments of the corolla differs likewise considerably: sometimes they are simply acute and as broad as in *C. Epithymum*, at other times finely pointed and comparatively narrow. In the form of the calyx and its segments I can perceive no material difference, if any, but it is white like the corolla, or at most but very faintly tinged, in the clover plant.

All the differences I have elsewhere detailed seemed to have disappeared in the specimens of this year, which, excepting in having a colourless calyx, I am quite unable to distinguish from the ordinary *C. Epithymum*.

The Clover Dodder, if a distinct species from *C. Epithymum*, is of no such

recent introduction as is generally supposed, for Mr. Borrer tells me he has noticed it upwards of forty years ago. Bertoloni and others certainly mention Clover has a plant to which *C. Epithymum* is attached, without allusion to any variation of structure. The question thus arises, Does *C. Epithymum* sometimes grow on Clover with us, and is there a second species more peculiarly allotted to the plant, or is this latter a mere variety or modification of the former, sometimes scarcely deviating from the typical form of our heaths and commons?

The agreeable honey-like smell of *C. Epithymum* gives place, when the flowers are going off, to a rank disagreeable odour, as Mr. Borrer remarked to me of the Clover Dodder.

A fourth species, *C. Epilinum*, very injurious to flax-fields on the Continent, has latterly found a place in the 'British Flora.' H. C. Watson, Esq., has sent me a specimen found by him near London. May it not also occur on our nearly allied *L. angustifolium*?

Order LIII. BORAGINACEÆ, DeCand.

"*Calyx* 5-, rarely 4-cleft, persistent. *Corolla* hypogynous, monopetalous, most frequently regular, 5-cleft, sometimes 4-cleft, with imbricated æstivation. *Stamens* 5, inserted into the corolla, alternate with its segments and equal to them in number, rarely more. *Ovary* 4-partite, 4-seeded. *Ovules* definite, pendulous. *Style* from near the base between the lobes of the ovary. *Achenes* 4, apart or united at the base. *Seeds* without or nearly without albumen. *Radicle* superior.—Herbs or shrubs. Leaves alternate, without stipules, usually scabrous. Flowers generally in more or less compound unilateral and circinate cymes (presenting the appearance of spikes or racemes).—*Br. Fl.*

I. CYNOGLOSSUM, Linn. Hound's-tongue.

"*Calyx* 5-cleft. *Corolla* (short) funnel-shaped, its mouth closed with prominent, convex, connivent scales. *Stamens* included within the corolla. *Achenes* roundish ovate, depressed, mucated, fixed by the edge to the persistent base of the style."—*Br. Fl.*

1. *C. officinale*, L. *Common Hound's-tongue*. "Lower leaves elliptical stalked softly downy, upper ones lanceolate narrowed below subcordate and semiamplexicaul, racemes without bractæas."—*Br. Fl.* p. 281. *E. B. t.* 921.

β. Leaves subglabrous, more or less shining, nearly scentless. *Merat, Nouv. Fl. des Env. de Par.* var. C. p. 73. *C. Hæneckii*, *R. et Sch. Syst.* iv. p. 74?

On dry waste ground, banks and pastures, along hedges, walls, amongst ruins, rubbish and by roadsides; frequent. *Fl.* May—July. *Fr.* August. ♂; occasionally ♀, *M. & K.*

On the Dover, Ryde, occasionally; and on the shore beyond Sea-view. Very common in some parts of Undercliff, as at Ventnor, Bonchurch, St. Lawrence. Near Dog Kennel.

β. On the right-hand bank of the steep descent into Bonchurch from Shanklin. At St. Lawrence, and especially at Bank-end, by the roadside. At Dodpits.

Western extremity of East-end, near Bonchurch farm. Puckaster, and in Berry lane, leading from Niton to Chale, *G. Kirkpatrick, Esq.*

The var. β . differs in no respect, except in the somewhat greener colour and shining appearance of the leaves, from the less degree of pubescence which imparts hairiness and opacity to the plant in its ordinary form. To this want of downiness may possibly be owing the weak smell of the bruised leaves, as compared with the more hoary state of the species, between which and the present variety every intermediate gradation may be found; nor indeed do I think that *C. officinale* is ever seen with us here so copiously clothed with pubescence as I believe to have remarked it in other places. Our variety must not be confounded with the other British species, *C. sylvaticum*, Hænke (*C. montanum*, Lam.), a very different plant, having leaves of a lively grass-green, of a very different shape, and rough with callous points, besides other marks of distinction.

Hound's-tongue is extensively naturalized in N. America. I remarked it growing abundantly about Hamilton and elsewhere in Canada.

II. BORAGO, Linn. Borage.*

"*Calyx* deeply 5-cleft. *Corolla* rotate, having its throat closed with 5 erect obtuse and emarginate teeth. *Stamens* exserted; *filaments* bifid, the inner branch bearing the anther; *anthers* linear-lanceolate, connivent. *Achenes* with an excavated base, seated on an hypogynous disk, free from the style."—*Br. Fl.*

†1. *B. officinalis*, L. *Common Borage*. "Lower leaves obovate attenuated at the base, segments of the corolla ovate acute spreading."—*Br. Fl.* p 280. *E. B.* t. 36.

In dry, rough, waste places, cultivated ground, amongst rubbish, by roadsides and along fences and hedges, also in pastures occasionally, but always near houses, and certainly not truly indigenous, though pretty frequent, in such situations. *Fl.* May—September. ☉.

E. Med. — In a lane leading from Sandown village to the marshes. In 1837 I saw part of a clover-field at Bonchurch quite blue with it. At Arreton. By Rans farm, near St. Lawrence. In pasture-ground below Little Buddle farm, Niton. At Godshill, and near Brading, *Mr. W. D. Snooke*.

W. Med. — Plentifully in a field on the S. side of Yarmouth. At Norton.

III. ANCHUSA, Linn. Alkanet.

"*Calyx* 5-cleft or 5-partite. *Corolla* funnel-shaped, tube straight, its mouth closed with convex connivent scales, the segments imbricated (not twisted). *Stamens* included. *Achenes* depressed. *Nuts* concave at the base, seated on an hypogynous disk, free from the style."—*Br. Fl.*

†1. *A. sempervirens*, L. *Evergreen Alkanet*. "Leaves ovate, lower ones upon long stalks, peduncles axillary, flowers subcapitate."

* Name said to be derived from *cor*, the heart, and *ago*, I bring about; hence the proverb,

"Ego Borago gaudia semper ago"
I Borage bring good courage,

or good spirits and joyous hilarity, as the Latin *gaudia* imports, a sense which our English word *courage* will also bear, whose root is the same as that of the herb reputed to inspire it.

tate accompanied by two leaves." — *Br. Fl.* p. 279. *E. B. t.* 45. *Curt. Br. Entom.* x. t. et fol. 452.

In waste places, amongst ruins, by roadsides, and on shady hedgebanks in lanes; a very dubious native of this island. *Fl.* May—August. 24.

Niton, *Mr. Curtis*, who thought it wild there, and has figured the plant in his superb work on 'British Entomology,' from a specimen gathered at that place. I have never seen it here in any satisfactory station, but have gathered it truly wild both in Devonshire and the Channel Islands. Naturalized in the garden at Montpellier House, Ventnor.

IV. *LYCOPSIS*, Linn. Bugloss.

"*Calyx* deeply 5-cleft. *Corolla* funnel-shaped, with a curved tube, the mouth closed with convex connivent scales: *limb* oblique. *Stamens* included. *Achenes* depressed, concave at the base, seated on an hypogynous disk, free from the style."—*Br. Fl.*

1. *L. arvensis*, L. *Small Bugloss*. "Leaves lanceolate repand-denticulate very hispid, calyx erect while in flower." — *Br. Fl.* p. 279. *E. B. t.* 938.

On dry sandy banks, fields and pastures, in waste and cultivated ground, by roadsides, &c.; common. *Fl.* May. ☉.

V. *SYMPHYTUM*, Linn. Comfrey.

"*Calyx* 5-cleft or 5-partite. *Corolla* enlarged upwards, its throat closed with connivent lanceolate subulate scales. *Achenes* ovate, excavated at the base, seated on an hypogynous disk, free from the style."—*Br. Fl.*

1. *S. officinale*, L. *Common Comfrey*. "Stem winged above, leaves ovate-lanceolate attenuated at the base and very decurrent." — *Br. Fl.* p. 280. *E. B. t.* 817.

β. Flowers rose-coloured. *S. patens*, Sibth.

By weedy river- and ditch-sides, in swampy thickets, along moist hedges and watery lanes, &c.; in many places abundantly. *Fl.* May—August. 24.

E. Med. — Common along the stream between Ronde and Bridge Court, and occasionally all the way to Budbridge. Abundant along the marsh-ditches in Sandown level. By Bowbridge.

W. Med. — Common about Brixton. Banks of the Medina, near Newport; Freshwater and Afton, rather common: *Mr. W. D. Snooke*.

β. About Brixton. Sandown marshes, *Mr. Curtis*, who observed it there also with flowers of the richest purple, and with others entirely green.

VI. *ECHIMUM*,* Linn. Viper's Bugloss.

Calyx 5-cleft. *Corolla* irregular, the *limb* 5-lobed, oblique, dilated upwards, open or naked; *tube* short. *Nuts* obliquely pointed, rough.

* Name from *εχis*, a viper, the head of which reptile the seeds are thought to resemble; hence, according to the old doctrine of signatures, the plant was deemed a remedy for the bite of venomous serpents, and obtained its English name of Viper's Grass, &c.

Very handsome and showy plants, chiefly natives of the S. of Europe and of Africa. One of the most splendid species, *E. candicans*, bears the ordinary winters of this island in the open ground, and ripens seed abundantly.

1. *E. vulgare*, L. *Common Viper's Bugloss*. Vect. *Viper-grass*. *Snake-flower*. "Stem herbaceous simple hispid with tubercles, leaves linear-lanceolate hispid, flowers in lateral short spikes, stamens longer than the corolla."—*Br. Fl.* p. 274. *E. B.* t. 181. *E. Italicum*, *E. B.* t. 2081 (not *L.*)

In dry waste or cultivated ground, amongst corn, on old walls, rubbish, borders of fields, banks and by roadsides, in a sandy, gravelly, and especially chalky soil; also on the shingly sea-beach, but very far from general or abundant in this part of the country. *Fl.* June—September. ♂.

E. Med.—Scarcely seen about Ryde. Plentifully on Ninham hill, a heath or common near Ninham farm, by Shanklin. South-east angle of Youngwood's copse, also in fields between Alverstone and Bordwood, and about Queen Bower, frequent. Shore near E. Cowes.

W. Med.—Walls of Carisbrooke castle. Field by the road from Freshwater to Alum Bay. In fields behind the heath at Colwell, where I have gathered a variety with the blossoms of a beautiful and permanent rose-colour. Near Kingston.

Root tapering. *Stems* 1—3 feet in height, usually solitary, simple or branching only from the very base, erect, sometimes spreading or diffuse, covered with white stiff hairs interspersed with long, pungent, simple bristles, each seated on a brownish tubercle. *Leaves* all lanceolate, various in breadth, entire or obscurely serrated, grayish green, very hairy, those of the root flat and tapering into short petioles, of the stem linear, erect, waved, with deflexed margins, occasionally broader, and soft and downy rather than hispid. *Flowers* in lateral, axillary, secund, recurved spikes forming a long leafy raceme, at first pinkish, afterwards bright blue (sometimes white, rose-coloured, purple or violet), very handsome. *Sepals* linear-lanceolate, as long as the tube of, but much shorter than, the entire corolla, nearly equal, acute. *Corolla* oblique, 5-lobed, with 2 principal nerves along the back, and one on each side from the lateral lobes; *tube* very short. *Stamens* (with us) much exerted, but they are liable to great variation as to length; *filaments* reddish; *anthers* blue: upper stamen attached to a projecting crest within the tube. *Style* long, white and hairy; *stigma* small, cloven.

This species occurs with white flowers in several parts of England, and I have gathered a variety in Sussex with blossoms of a violet-colour, in this respect, and in its diffuse mode of growth and broadly elliptical stem-leaves, making an approach to *E. violaceum*, but that species has the radical leaves ovate or oblong, the stem branched and destitute of tubercles.

I understand the Viper's Bugloss is a formidable nuisance on tillage-lands in Virginia, *Conf. Darling. Fl. Cest.* p. 119.

VII. PULMONARIA, Linn. Lungwort.

"*Calyx* with 5 angles, 5-cleft. *Corolla* regular, funnel-shaped, its throat naked. *Stamens* included: *filaments* very short. *Style* simple. *Achenes* with a flat base, seated on an hypogynous disk, free from the style."—*Br. Fl.*

1. *P. angustifolia*, L. *Narrow-leaved Lungwort*. *Cowslips of Jerusalem*. Vect. *Blue Cowslip*. "Leaves scabrous, radical ones petiolate, upper ones sessile all lanceolate."—*Br. Fl.* p. 274. *E. B.* xxiii. t. 1628. *Curt. Br. Entom.* xiii. t. et fol. 610. *Reichenb. Icon.* vi. t. DII. fig. 695. *Pulmonaria*, V. *Pannonica*, *Clus. Hist.*

Plant. var. lib. v. p. 170. Ger. Em. p. 808, fig. 1. P. maculosa, idem.

β. Leaves linear-lanceolate. *P. azurea*, Bess, *Enum. Plant.* vol. &c. p. 9, No. 205. *Clusius, Hist. Pl. rar. lib. v. p. 169. Pulm. 3tia Austriaca, Ger. Em. p. 808, fig. 3 (the same block). Reich. Icon. vi. t. DI. fig. 694. P. mollis, Wolf. : Reich. Icon. vi. t. 503, fig. 696. Curt. Bot. Mag. L. t. 2242. P. media, Host. Fl. Aust. i. p. 235. Reich. Icon. vi. t. DIV. fig. 694.*

γ. Flowers white.

In woods, thickets, copses, on hedgebanks and borders of fields; abundantly but exclusively on the stiff clay of the eocene, tertiary or freshwater deposits North of the great central chalk range, and particularly in East Medina. *Fl. March—June. 2l.*

E. Med.—About Ryde, plentifully. In Quarr copse, Shore copse, and in the open green by Mr. Smith's new house between Quarr abbey and Fishbourne. Wood between Ninham farm and the Newport road, also along the road itself, sparingly. All over Firestone copse, Combley woods,* Briddlesford and Chillingwood copses. Common in Whitefield wood and in those adjacent, as about Roughborough, Rickhouse and Hardingshoot farms. Between E. Cowes and Wootton bridge, in Brock's copse near Palmer's farm, plentifully, also about Shanbler's farm. Steyn wood, near Bembridge. Abundant in copses on the E. bank of the Medina, a little above E. Cowes.

W. Med.—Rare in this division, and only, I believe, about Newport and Cowes. In a wood between Somerton farm and the Medina. Sparingly in Gurnet copse. Plentiful in and about Parkhurst forest, *Miss G. Kilderbee !!!*

β. Not uncommon with the typical form.

γ. In a little copse near the Medina, by N. Fairlee, near Newport, *G. Kirkpatrick, Esq. !!!* In this white-flowered variety the leaves are extremely narrow.

Herb from 6 to 12 inches high, or even more. Root thick, fleshy, knotty, blackish or brownish, with several stout fibres, running deep in the ground, and having a tough medullary chord in the centre of each. Stems simple, leafy, succulent and brittle, obtusely angular, slightly winged by the decurrent bases of the cauline leaves, hispid with white, simple, spreading and deflexed hairs. Radical leaves fascicled, much enlarged after flowering, tapering into broad, membranous, winged petioles, very variable in breadth, commonly lanceolate or elliptic-lanceolate, at other times linear-lanceolate and often very narrow; not unfrequently they are ovate-lanceolate and somewhat rounded at the base, never decidedly cordate

* *P. virginica*, L.—“In a wood through which the road passes about two miles and a half from Newport, I. of W., to Ryde, as common as *Scilla nutans* in our woods,” *Mr. Griffith* in Bot. Guide.

Notwithstanding the assertion here made of the frequency of an American species of *Pulmonaria* in the locality above mentioned, I have not succeeded in finding any other than *P. angustifolia* in woods between Newport and Ryde, and apprehend the introduction of the former into our Flora must have originated in error. *P. virginica* has also been found, by another authority (*Rev. Norton Nicholls*), apparently wild near Netley abbey, as mentioned in the ‘Botanist’s Guide,’ and from which station I have seen specimens in the Banksian herbarium, now in the British Museum.

The wood in question, given in the Isle-of-Wight station, I imagine to be Combley Great Wood, as, through that and Firestone copse, the old road between Newport and Ryde appears not many years since to have passed. On the present line there is no wood through which it can run within the alleged distance of 2½ miles from Newport. I am nevertheless all but persuaded that the account of the discovery of *P. virginica* is erroneous, and that it may be easily traced to the authors of the Bot. Guide inadvertently subjoining the then quite recent detection of *P. angustifolia* in this island, by Mr. Griffith, in 1804, to their announcement of the American species as being found near Southampton.

as in *P. officinalis*, with a stout prominent midrib beneath, at length 6—10 inches long, their margins mostly a little thickened and inflexed, bright grayish green, soft and flexile, hispid but not harsh with copious erect, pale, simple hairs springing from minute tubercles, usually nebulously spotted with greenish white, more rarely quite plain; sometimes these spots are very large and confluent, occupying the greater portion of the leaf: *stem-leaves* hairy and spotted like the rest, the lower ones more or less and very broadly petiolate, similar in form to those at the root, but becoming sessile as they ascend; the uppermost quite so, rounded or cordate at the base and semiamplexicaul, running far down upon the stem into narrow winged angles, mostly broadly ovate, with long points, at other times oblongo-elliptical, or even in the narrow-leaved state of the plant linear-lanceolate. *Flowers* shortly pedicellate, in a terminal leafy cluster of about 3 primary divisions; in an early stage the inflorescence appears capitate, but becomes spreading in more advanced growth and subpaniculate, the clusters a little recurved. *Calyx* very hispid, ventricose, cleft about $\frac{1}{3}$ rd down into 5 equal, triangular, acute segments, each traversed by one of the five prominent ribs or angles. *Bracts* at the base of the pedicels, ovate-lanceolate, leafy, or wanting. *Corolla* reddish in the bud, then violet, and lastly fine ultramarine blue fading into dull blue or purple, the limb funnel-shaped, with 5 rounded equal segments; *tube* about the length of the calyx, a little contracted in the middle, white. *Stamens* very variable in their length and insertion; alternating with them are 5 small tufts of erect pellucid hairs placed at the top of the tube. *Anthers* oblongo-elliptical, blackish or brownish; *pollen* white. *Style* slightly angular, very variable in length; *stigma* capitate-globose, 2-lobed, papilloso-glandulose. *Nuts* enclosed in the now much inflated calyx, the segments of which converge and completely conceal them, as in a 5-valved capsule; one or two often abortive, ovoid, with an acute vertical edge all around, more or less pubescent, very smooth and shining, inserted a little obliquely on a tumid annular gland fitting into a cup-shaped cavity, with a projecting border at the base of the style; when ripe jet-black, but mostly falling away before attaining maturity.

The flowers soon lose the brilliancy they at first display, becoming dull purple and wrinkled, and, though produced in long succession, are not individually of long duration, and the later blossoms, opening but few at a time, give, with the half-withered remains of the former ones, a want of neatness which greatly diminishes the elegance of the plant.

VIII. LITHOSPERMUM, Linn. Gromwell.

"*Calyx* in 5 deep segments. *Corolla* funnel-shaped, its mouth naked (or with very minute scales). *Stamens* included: *filaments* very short. *Style* simple. *Achenes* stony, with a truncated base, seated on an hypogynous disk, free from the style."—*Br. Fl.*

1. *L. officinale*, L. *Common Gromwell*. *Gray Mill* or *Gray Millet*. "Stem erect very much branched, leaves broadly lanceolate acute nerved rough above hairy beneath, tube of the corolla as long as the calyx, achenes smooth."—*Br. Fl.* p. 275. *E. B. t.* 134.

In dry thickets, hedges and pastures, rough waste places, cornfields, amongst rubbish, ruins, and by waysides; most frequent perhaps on chalky soils, but scarcely a very common plant in this island. *Fl.* May, June. *Fr.* July, August. 2.

E. Med.—Common in the pits or hollows (old stone workings) in Quarr copse, Nettleston Point, and between it and the Priory, along the shore. Frequent in Bloodstone copse. In Eagle-head copse, in considerable plenty.

W. Med.—In Bottomground reew (copse), near Idlecumbe. On chalky slopes amongst brushwood between Rock and Comb farm. Brixton.

Nuts about a line and a half in length, ovoid, pointed at the apex, bluish or grayish white or partially brownish yellow, the testa extremely hard, smooth and polished, resembling porcelain, enclosing a jet-black, wrinkled and shining nucleus and often bursting spontaneously.

The seeds, which resemble miniature eggs of porcelain, would, from the stony hardness of the shell or testa, be long in vegetating were not the latter endued with the faculty of spontaneously falling to pieces, and so exposing the embryo to the action of air and moisture.

2. *L. arvense*, L. *Corn Gromwell. Bastard Alkanet.* "Stem erect branched, leaves lanceolate acute hairy, calyx a little shorter than the corolla, its segments patent when containing the ripe wrinkled nuts."—*Br. Fl.* p. 275. *E. B. t.* 123.

In dry waste and cultivated ground, cornfields, &c.; more common here than the last. *Fl.* April—July. ☉.

IX. MYOSOTIS, Linn. Scorpion-grass.

"*Calyx* 5-cleft. *Corolla* salver-shaped, the lobes obtuse, twisted in æstivation, the mouth half-closed with short rounded valves. *Stamens* included. *Style* simple. *Achenes* smooth, attached to the bottom of the calyx by a minute flat spot (not perforated at the base)."—*Br. Fl.*

The twisted æstivation in *Myosotis*, though restricted to this genus of *Boraginaceæ*, is one of the strongest points of analogy between that order and *Convolvulaceæ*.

1. *M. palustris*, With. *Great Water Scorpion-grass. Forget-me-not.* "Calyx with straight appressed bristles cleft to about one-third of its length when in fruit campanulate open shorter than the divergent pedicels, teeth short triangular, limb of the corolla flat longer than the tube, style as long as the calyx, pubescence of the stem spreading (or wanting)." — *Br. Fl.* p. 276. *E. B. t.* 1973. *M. scorpioides palustris*, L.: *Sm. Fl. Brit. i.* p. 212.

By clear ditches, rills, pools, rivers and in wet marshy places, but rarely. *Fl.* May—August. ☿.

E. Med.—Margin of a small pool in the Brick-kiln Butt facing Wackland farm-house, *Mr. Loe !!!*

W. Med.—In a boggy meadow by the stream-side a little above Calbourne village.

2. *M. repens*, Don. *Creeping-rooted Scorpion-grass.* "Calyx with straight appressed bristles cleft to about the middle when in fruit open or connivent shorter than the divergent pedicel, teeth narrow-lanceolate acute, limb of the corolla flat longer than the tube, lobes somewhat emarginate style as long as the calyx, pubescence of the stem spreading." — *Br. Fl.* p. 276. *Borr. in E. B. S. t.* 2703.

In similar situations with the last, but much more frequent; sometimes found in moist woods. *Fl.* June—August. ☿.

E. Med.—In the marsh-ditches about the Wilderness, abundantly. New copse.

W. Med.—Plentiful in a drain along the road between the Debborn turnpike and Gurnet farm.

3. *M. cæspitosa*, Schultz. *Tufted Water Scorpion-grass*. "Calyx with straight appressed bristles when in fruit campanulate open shorter than the divergent pedicels, teeth narrow-lanceolate bluntish, limb of the corolla concave (or flat when fully expanded) equalling the tube, style very short, pubescence of the stem appressed."—*Br. Fl.* p. 277. *Borr. in E. B. S. t.* 2661.

In shallow drains, ditches, pools and splashy places; not uncommon. *Fl.* May—August. 24, *Gaud.*; 24 or 3, *Sm.*; ☉, *M. et K.*

E. Med.—In Sandown marshes, not uncommonly. In a little pool in a field near Coppid Hall. Ditches in the meadows at the bottom of Brading marshes, *Mr. W. Wilson Saunders*.

W. Med.—Plentiful in a little cut or drain across the little plot of planted ground at the entrance of the marsh at Easton (Freshwater Gate).

The whole plant is pale green, with a smooth, shining, translucent aspect. *Root* fibrous, annual, biennial, or even perennial according to different authors. *Stem* erect or reclining, and rooting from the lowermost joints, about a foot high, much branched, roundish, succulent, thinly clothed with fine, white, close-pressed hairs. *Root-leaves* somewhat spatulate, those of the stem elliptical or obovato-lanceolate, obtuse, a little thickened at the tip but not mucronate, entire, and clothed like the stem with the same white close-pressed pubescence, smoother beneath, their margins a little inflexed. *Flowers* in long, leafless, spreading racemes, like those of *M. palustris* but much smaller, bright blue with a yellow eye, the base of each segment of the corolla whitish. *Pedicels* (in fruit) secund, oblique, divergent, the uppermost suberect, all finally elongating and at length deflexed. *Calyx* bell-shaped, cleft nearly half way into 5 ovate bluntish segments, and covered like the pedicels with appressed hairs. *Limb* of the corolla a little exceeding the calyx, its segments rounded, entire, not much longer than the tube; *scales* bright golden yellow. *Nuts* ovate, gibbous on the side next the style, very smooth and shining, with a thin sharp edge all around their vertical circumference.

4. *M. arvensis*, Hoffm. *Field Scorpion-grass*. "Calyx with spreading uncinat bristles half-5-cleft when in fruit ovate closed shorter than the divergent pedicels, limb of the corolla concave equalling the tube, style very short, raceme stalked."—*Br. Fl.* p. 277. *E. B. S. t.* 2629. *M. intermedia*, *Link.*

In open cultivated fields and waste places, also in woods, groves, thickets and on shady hedgebanks; very common. *Fl.* June—August. ☉.

5. *M. collina*, Hoffm. *Early Field Scorpion-grass*. "Calyx with spreading uncinat bristles when in fruit ventricose open equalling the divergent pedicels, limb of the corolla concave shorter than the tube, style about equal to the tube of the calyx, raceme stalked usually with one distant flower at the base."—*Br. Fl.* p. 278. *E. B. S. sub. fol.* 2629. *M. arvensis*, *E. B. t.* 2558. *M. hispida*, *Schlecht.*

On banks, wall-tops, pastures and waste ground, in dry sandy soil; abundant. *Fl.* April—June. ☉.

E. Med.—Amongst low bushes on the Dover, Ryde, plentiful. Dover spit, St. Helens, abundant. [On the churchyard-wall in Newchurch shoot, abundantly, *Dr. Bell-Salter*, Edrs.]

W. Med.—On Carisbrooke-castle walls, and on the dry turf beneath them, *G. Kirkpatrick, Esq.*

6. *M. versicolor*, Lehm. *Yellow and Blue Scorpion-grass*. "Calyx with spreading uncinat bristles when in fruit oblong closed longer than the almost erect pedicels, limb of the corolla concave shorter than the exserted tube, style as long as the calyx, raceme stalked."—*Br. Fl.* p. 278. *E. B. t.* 2558 (ad calcem) and t. 480 (left-hand figure).

On waste or cultivated ground, dry sandy fields, pastures, walls and banks, sometimes in moist places, meadows, &c.; very common. *Fl.* April—June. ☉.

In a specimen from Ryde I find the hairs of the calyx mostly appressed or suberect and straight or scarcely uncinat. It agrees well with the figure in *E. Bot.*, and is perhaps the *M. pusilla* alluded to in *Hook. Br. Fl.* 3rd ed. p. 104. The calyx however in *E. Bot.* is drawn quite devoid of hairs, which is obviously an omission of the engraver. The species of this genus, like those of *Rubus*, *Rosa*, *Salix* and some others, seem involved in inextricable perplexity, and are probably inordinately multiplied from varieties of a few well-defined ones.

Order LIV. SOLANACEÆ, Juss.

"Calyx 5-, rarely 4-partite, persistent. Corolla monopetalous, hypogynous, its limb 5-cleft, equal or somewhat unequal, deciduous, with a plicate æstivation. Stamens inserted into the corolla, alternate with its segments and equalling them in number. Ovary 1-, 2-, or 4-celled, many-seeded. Style 1. Stigma obtuse, rarely lobed. Pericarp 1-, 2-, or 4-celled; either a capsule with a parallel double dissepiment, or a berry, with the receptacles united to the dissepiments. Seeds numerous. Embryo included in a fleshy albumen more or less curved, often out of the axis. Radicle opposite the hilum.—Herbs or shrubs. Leaves alternate, without stipules, floral ones sometimes opposite. Inflorescence usually extra-axillary (lateral with respect to the petiole)."—*Br. Fl.*

I. SOLANUM,* Linn. Nightshade.

Calyx 5—10 parted. Corolla rotate. Anthers clustered round the style, their cells opening by 2 terminal pores. Berry 2- or more celled, many-seeded.

1. *S. Dulcamara*, L. *Woody Nightshade*.† *Bittersweet*. Stem shrubby climbing without thorns flexuose, lower leaves ovate, upper ones hastate auriculate, corymbs cymose drooping opposite the leaves, berries ovate. *Sm. E. Fl.* i. p. 311. *Br. Fl.* p. 283. *Lind. Syn.* p. 182. *E. B.* viii. t. 565. *Curt. Fl. Lond.* fasc. i. t. 14.

β. Stem and leaves downy. *S. Dulc.* var. β. *tomentosum*, Koch, *Syn. Fl. Germ. et Helv.* p. 508.

* Derivation very uncertain. It has perhaps been altered from *solamen*, from its quieting or solacing effects as a medicine.

† Frequently but most erroneously called Deadly Nightshade. See *Atropa*.

γ. Stems much branched, diffuse or prostrate, not scandent, and, as well as the somewhat fleshy leaves and very angular branches, downy and almost hispid with spreading or partly curved hairs. *S. lignosum* seu *Dulcamara marina*, Ray, *Syn.* ed. Dillen. p. 265?

δ. Flowers white.

In mostly damp or wet hedges, woods, groves, thickets and bushy pastures, about old walls, fences and ruins, on river- and ditch-banks and in moist shady places generally; very common. *Fl.* June—August. *h*.

β. On the Dover, Ryde. Barton copse, near E. Cowes. By the gate leading into the Newport road from Quarr abbey, and elsewhere between Ryde and Wootton. Almost as common a form in the island as α., but variable in the degree of pubescence.

γ. On the sea-beach.

δ. I think I have seen this var. on the wet banks of slipped land in Whitecliff bay. In a street at Ryde, *Dawson Turner, Esq.*, in Snooke's Fl. Vect. Sandown bay, and between Calbourne and Brixton, *G. Kirkpatrick, Esq.* In my specimens the leaves are all auricled, and the plant scarcely differs from β. except in not being climbing.

2. *S. nigrum*, L. *Black or Garden Nightshade*. Stem herbaceous angular without thorns, leaves ovate bluntly sinuato-dentate or wavy, umbels lateral drooping remote from the leaves, berries globular. *Sm. E. Fl.* i. p. 319. *Br. Fl.* p. 283. *Lind. Syn.* p. 182. *E. B.* viii. t. 566. *Curt. Fl. Lond.* fasc. 2, t. 14.

On waste ground, about houses and farmyards, on dunghills, amongst rubbish and in neglected gardens; very common. *Fl.* June—October. *Fr.* September, October. ☉, or sometimes ♀, *Sm.*

A rank bushy weed, of a dark or blackish green colour. *Root* annual or sometimes perennial. *Stem* with many spreading angular branches, beset with rough tubercles, which appear to be the rudiments of those thorns or prickles that arm so many foreign species of *Solanum*. *Leaves* ovate, stalked, dentato-sinuate, entire at the base and towards the point, slightly hairy in my specimens. *Flowers* white, in pedunculated drooping umbels, from the upper part of the interramifications of the stem, each flower on a tapering downy pedicel. *Calyx*-segments ovate-obtuse, those of the *corolla* lanceolate, downy, as are the filaments and style. *Anthers* yellow, surrounding the germen like a tube, bursting on the inner face just below their truncate summit. *Berries* the size of large peas, purplish black, of a sweet mawkish taste, very juicy, 2-celled, with a large fleshy placenta in the middle of the septum, and to which are attached numerous small, whitish, compressed seeds, pointed at one end.

Varieties of this plant with yellow and red berries are found on the Continent, and are considered by some as distinct species. A var. with green berries grows truly wild at Henfield, in Sussex, where it was shown me by Mr. Borrer, who has likewise observed it in Essex.

The flowers of *S. nigrum*, gathered in warm close weather, occasionally exhale an odour of musk as powerfully as those of *Mimulus moschatus*, which I have myself remarked; the smell is however very transient, ceasing to be perceptible almost immediately.

This species in some of its forms is very widely dispersed over the globe, and, notwithstanding its acknowledged poisonous properties, is cultivated in the Mauritius and elsewhere as an esculent vegetable. (Bojer, *Hort. Maurit.*), surely not for want of more palatable and wholesome aliment.*

* See a confirmation of this statement in Lesson's 'Flore Rochfortine,' 8vo, p. 363; also Sloane, *Nat. Hist. of Jamaica*, i. p. 236. May not the narcotic principle be destroyed by boiling, though its activity is not impaired by infusion?

II. ATROPA, Linn. Dwale.*

"Calyx 5-partite. Corolla campanulate, with a short tube, the lobes equal. Stamens distant above. Berry of 2 cells."—Br. Fl.

1. A. Belladonna, L. Deadly Nightshade. Dwale. Stem herbaceous, leaves ovate quite entire, flowers axillary stalked mostly solitary. Sm. E. Fl. i. p. 317. Br. Fl. p. 283. Lind. Syn. p. 182. E. B. ix. t. 592. Curt. Fl. Lond. fasc. 5, t. 16. Jac. Fl. Aust. iv. 5, t. 309 (opt.)

In woods, hedges and bushy places, on waste ground, amongst ruins, under park-palings, and sometimes on the pebbly beach; very rare, if not now extinct. Fl. June—August. Fr. August, September. 2f.

Under the palings near the gardener's cottage at Knighton Manor-house, in considerable plenty, Lady Brenton.

I have sought carefully and repeatedly for this plant at Knighton, but hitherto without success. A coloured sketch taken of the living plant, by Lady Brenton, leaves no room to doubt the correctness of the observation, and she believes some alterations made on the premises may have caused its disappearance.

Root perennial, thick, whitish and fleshy, creeping by offsets from the crown. Stem 1 or several, from 2 feet or under to 3, 4, or even 5 feet in height, herbaceous, erect, pale green or purplish, firm, solid, simple, subterete, slightly angular and furrowed below, dividing above into usually 3, sometimes 4 main divaricate branches, often with a smaller and shorter supplementary one, which are dichotomously forked, leafy, and covered like the rest of the stem, but more copiously, with short, spreading, glandulose pubescence. Leaves quite entire, dull green, nearly glabrous above, paler and a little hairy beneath, as on the stem, especially along the prominent ribs, of a weak flaccid texture and somewhat fat, fleshy or succulent, hence quickly drooping when gathered; the lower and middle stem-leaves alternate or scattered, often 9 or 10 inches long and 5 to 6 inches wide, ovate-elliptical, acute, tapering into short, semiterete, slightly winged petioles; upper stem-leaves apparently opposite,† in pairs, one of each pair much the smaller of the two; less than those below, more truly ovate, rounded or subcordate at base. Stipules none. Peduncles single-flowered, solitary, much shorter than the leaves, terete, lax, drooping or decurved, very downy. Flowers nodding or drooping, scentless. Calyx persistent, downy within and without, not half the length of the corolla; sepals ovate, acuminate, entire or with an occasional tooth or lobe, 3-ribbed, unequal in length and 2 of them much broader than the rest, widely spreading and enlarged in fruit. Corolla about 1 or 1½ inch in length, campanulate, downy, the tube very short, uncoloured, 5-lobed and 5-furrowed; limb somewhat ventricose, many-ribbed, dull muddy green externally, within glabrous, yellowish green at base checkered with bottle-green, the border in 5 broadly ovate, scarcely pointed, rather unequal, finally spreading segments, with reflexed margins, of a lurid dingy purple, with which the whole anterior portion of the limb is tinged and pencilled. Stamens included, inserted at the bottom of the tube and adnate with the latter its whole length, where they are very hairy; filaments glabrous in their free part, filiform, terete, their summits bent downwards; anthers large, white, inverted by the prone curvature of the top of the filament, cordate by the separation of their lobes below, betwixt which the filament is inserted, 2-celled, bursting laterally, glabrous; pollen white, globose. Style

* Dwale: I imagine from the Dutch, *dwalen*, to err, to go astray; or more immediately from the obsolete verb *dwaale*, to be delirious; the loss of sense and reason being the most prominent symptom induced by this poison.

† I say here apparently, because they spring unilaterally from the stem and not from its opposite sides.

deciduous, filiform, about as long as the limb of the corolla, its summit (*stigma*) transverse, capitate, oblong, curved backwards into a semicircle, green and bristly. *Ovary* glabrous, semiovoid, surrounded at base by a white or dull orange, annular and tumid nectariferous gland. *Berry* perfectly 2-celled, globose, much depressed, obscurely lobed or often somewhat quadrangular, from about 6 to 9 lines in diameter, deep purplish black, very soft, shining and succulent when ripe, closely sessile on the widely spreading and enlarged calyx. *Seeds* very numerous, attached to a large fleshy placenta projecting into each cell at right angles to the dissepiment, irregular in shape, roundish, subreniform or subtriangular, when freed from the tinging juice and dried up of a deep iron-gray, with a somewhat metallic lustre like black-lead, beautifully reticulate-punctate, with angular cells or depressions having very sharp edges.

The flavour of the ripe berries is decidedly sweet and agreeable, wholly devoid of any bitter or nauseous aftertaste, and, in conjunction with their glossy and rich purple aspect, resembling black-heart cherries, hold out a tempting but fatal lure to the ignorant or unwary.

Micandra physaloides, Gærtn. (*Atropa physaloides*, L.) originally from Peru, and known by its sinuately dentate leaves, large pale blue flowers, and 5-angled, winged, inflated calyx enclosing the fruit, is partly naturalized in waste and cultivated ground at Ryde, Shanklin and other parts of the island, flowering from July to October. I have gathered it at Hastings, and believe that, like *Datura Stramonium*, it is gradually spreading itself over this and other countries of Europe.

III. HYOSCYAMUS,* Linn. Henbane.†

Calyx 5-cleft, tubular, ventricose below the contracted middle. *Corolla* funnel-shaped, obliquely 5-lobed. *Stigma* capitate. *Cap-sule* at the bottom of the rigid persistent calyx, 2-celled, many-seeded, opening transversely at its truncate summit, with a moveable operculum.

1. *H. niger*, L. *Common Henbane*. Stem-leaves oblong amplexicaul deeply sinuato-dentate, flowers unilateral axillary nearly sessile. *Sm. E. Fl.* i. p. 316. *Br. Fl.* p. 282. *E. B.* ix. t. 591.

On dry waste ground, pastures, village-greens, rubbish and by roadsides, especially near towns and on calcareous soils, also along the sea-beach and on the high downs; frequent. *Fl.* May—August. *Fr.* August, September. ♂, or ♀, *Sm.*

E. Med.—On the Dover and elsewhere about Ryde, occasionally. Shore near E. Cowes, abundantly. Bonchurch, just at the entrance of the rough ground they have lately begun building upon, plentiful. Very frequently at Ventnor, especially on excavation-heaps at its western end, near the junction of the upper and lower branches of the road from Newport descending to the town. At St. Lawrence and Bank-end. By Little Buddle farm, Niton. At Binstead, *Rev. Wm. Darwin Fox*, who told me it came up invariably with *Datura Stramonium* in his garden there, wherever the ground was disturbed for making fresh borders.

* Name from ὕς, ὕος, a hog, and νύκμος, a bean, which the seed-vessel (?) was thought to resemble.

† It is difficult to account for the origin of the English name Henbane, except by supposing it to be a corrupt translation of the Greek, and properly Hogbean, as the French word *Jusquiame* and the Italian *Giusquiamo* are more immediately derived from the same classical root. I can find no allusion by any author, ancient or modern, to any injurious effect on poultry which might justify the appellation.

Old quarry by Morton house, near Brading. Morton farmyard, very abundantly, *Dr. Bell-Salter*. Near the hotel (Fisher's?) at Ventnor; and at St. Lawrence, in plenty, *Mr. W. D. Snooke*. On a waste spot of ground by the roadside between Bembridge and Yaverland, *W. Wilson Saunders, Esq.* [At the foot of Bembridge down, near Yaverland farm, *Dr. Bell-Salter, Edrs.*]

W. Med. — On the shingle at Freshwater Gate, and very large and abundant on the shore a little W. of Norton, and on the flagstaff-mound at the preventive-station. Along the beach in Thorness bay, frequent, far from any houses. At Brook, also frequent. Near the Blackgang hotel. Plentiful about Compton farm. On Buccombe down. Field between Bakerwood and Dewcombe coppices. At the foot of Mottiston down, on the S. side.

A stout bushy plant, 2—4 feet high, thickly clothed with soft clammy hairs, exhaling a strong, heavy, narcotic odour much like that of the black Currant, disagreeable to most persons, and extremely oppressive and injurious to some constitutions.* *Root* thick, white and fleshy, fusiform, with us, as it mostly but not always is, biennial, though Smith and Hooker make it annual. *Stem* erect, rounded, much branched, almost woody. *Leaves* soft and pliant, unctuous to the touch, dull green, strongly veined, radical ones on semicylindrical petioles, triangular-ovate, spreading on the ground; *stem-leaves* alternate, sessile, semiamplexicaul; both deeply sinuato-dentate or subbipinnatifid, with sharp, spreading, lobe-like teeth. *Flowers* nearly sessile, secund, produced in succession at the end of the recurved leafy clusters of ripening capsules, which elongate with the growth of the branches to 18 inches or upwards, bearing buds, blossoms and seeds in all states of maturity until nearly the close of summer. *Calyx* pitcher-shaped, downy, closely embracing the seed-vessel, strongly ribbed with a connecting network of prominent veins, contracted beneath the funnel-shaped limb, whose margin is 5-cleft, the segments broadly triangular, erect, with a sharp hard point. *Corolla* funnel-shaped, hairy, large and handsome, the limb in 5 unequal rounded lobes, pale whitish or straw-yellow, beautifully pencilled with dark reticulations and a veining of rich purple in the throat. *Stamens* inserted on the tube, unequal and a little declined, hairy a great part of their length; *anthers* violet, bursting laterally, ovate, compressed, 2-celled. *Style* round, smooth, purplish; *stigma* roundish, flat and hairy, with a depression in the centre. *Capsules* suberect, in long, unilateral, alternately 2-ranked clusters, closely protected by the excessively rigid almost prickly calyx, ovate, thin and membranous, veined, truncate at top where the capsule is curiously fitted with an oval lid or valve of a strong elastic texture, somewhat 2-lobed and crowned with the remains of the stigma: this lid separates when the seed is ripe, and no doubt serves to defend them from the rain or dew which may lodge in the erect and cup-like calyx-limb; *placenta* triangular, not reaching to the bottom of the capsule, formed by a reduplication of the dissepiments, to which they are at right angles. *Seeds* numerous, kidney-shaped, grayish, much compressed, beautifully covered with angular reticulations, the interstices forming deep cellular excavations sparkling here and there with brilliant metallic and prismatic colours.

When growing on the plant and nearly ripe, I have been struck by the general resemblance of the capsules to clusters of filberts in their leafy involucre, a remark which has been made by others on first seeing them; and when divested of their calycine covering these seed-vessels, with their lids, still more exactly represent a now somewhat old-fashioned form of cast-iron pot or boiler, the bow handle and three short legs being alone wanting to make the imitation perfect.

The seeds of the Henbane, like those of the Poppy, are replete with a fixed oil, said to be devoid of the narcotic quality of the rest of the plant.

Henbane is occasionally naturalized in America, but is rare in that

* The Rev. R. W. Sibthorp related to me that himself and a friend, on gathering this plant near Tattersall, in Lincolnshire, were both affected with nausea and tremor, from which the former soon recovered, but his friend remained seriously indisposed until the following day, from the narcotic effluvia.

country except in some of the northern parts; I noticed it frequently at Montreal and around Quebec in 1846.

IV. DATURA,* *Linn.* Thornapple.

"*Calyx* tubular, deciduous. *Corolla* funnel-shaped, angular. plaited. *Anthers* opening by longitudinal slits. *Stigma* 2-lobed, *Capsule* half-4-celled, 4-valved."—*Br. Fl.*

† 1. *D. Stramonium*, L. *Common Thornapple*. "Herbaceous, leaves ovate angulate-sinuate glabrous, fruit ovate erect clothed with numerous nearly equal spines."—*Br. Fl.* p. 282. *E. B. t.* 1288.

By roadsides, in waste and cultivated ground, about towns, on dunghills and in newly turned-up soil of fields, gardens or building-lots; here and there sporadically, and scarcely persistent long together in any one station. *Fl.* July, August. *Fr.* September, October. ☉.

E. Med.—On the Dover, Ryde, a plant or two occasionally. In Turner's nursery-ground, and in the garden of Williams's hotel, Shanklin, where it has been growing for many years, but was most likely sown originally in both for medicinal purposes. Garden-ground at Niton. A weed in the garden of the Rev. — Girard, at Godshill. In a lane at the N.E. end of Godshill, *Mr. W. D. Snooke*. On the sea-wall under the grounds at Apley, *Miss T. Price*! In the garden of the Rev. Wm. Darwin Fox, at Binstead. At Ryde, I. of W., *Mr. S. Woods* in *Bot. Guide*.

W. Med.—In Northwood park, near the circular reservoir, on ground formerly a garden.

Root whitish, tapering, with lateral simple or branched fibres. *Stem* herbaceous, erect, from about 1 to 3 feet high, pale yellowish green, roundish or obscurely angular, stout, firm, smooth and succulent, fistulose in the centre, glabrous or nearly so below, dichotomously and divaricately branched, subcompressed and laterally grooved above, with a short pubescence on the upper side of the branches chiefly. *Leaves* unequal in size, the lowermost very large, dull green, somewhat fleshy or succulent, glabrous or slightly pubescent, on slightly channelled terete petioles shorter than themselves; alternate, those at the top appearing to be opposite, but always with a rudimentary or nascent branch in the axil of each, showing the real mode of arrangement; ovate, often unequal at base, coarsely and unequally sinuate-dentate and angular, almost lobed, the teeth very acute, straight or a little uncinat, mucronate-apiculate, the sinuses shallow or rounded; beneath paler, with about 8 or 9 very prominent terete ribs. *Flowers* solitary, in the forks of the branches or between the highest and opposite leaves, very sweet-scented, like primroses, and most so towards evening, on very short, stout and downy peduncles. *Calyx* pale yellowish green, membranous, slightly pubescent, 1½ inch in length, erect, smooth, ovate-oblong, with 5 acutely plicate angle-like ribs terminating in as many unequal triangular teeth or segments, with marcescent points; slightly contracted below the summit. *Corolla* white, membranous, yellowish or cream-coloured before expansion, twice the length of the calyx, funnel-shaped, the tube yellowish green and a little contracted in the middle, the limb plicately 5-ribbed and angled, each angle terminating in one of the 5 subulate oblique points of the corolla. *Stamens* inserted at the top of the tube, much shorter than the corolla, the inferior half of their terete filaments dilated,

* *Dhôteora*, Hindostanee; *Khala D'hatoora*, Bengalee; *Krishna Dhaturra*, Sanscrit; Thomson's 'London Dispensatory,' who says these oriental synonyms belong to *D. fastuosa*, but are probably applied as well to *D. Metel*, *D. Tatula* and our common *Stramonium*, all natives of the East. *Tatbrah*, Arabic, according to Forsköl.

flattened, adnate to the tube and pubescent, their upper free half quite glabrous; anthers erect, slightly hairy, cream-coloured, narrowly elliptical, flat, bursting all along their thin lateral margins; pollen white, globular. Style terete, glabrous, compressed and clavate at summit; stigma papillose-glandulose, decurrent, nectariferous. Ovary conical, faintly 2-4 lobed, echinate with the nascent spines of the fruit. Capsule ovoid, echinate with strong, tapering, sharp and very unequal spines, pubescent when green, subtended by the large, persistent and deflexed base of the calyx.

A plant or two of *Stramonium* is commonly seen in the cottager's garden, as being much in request for asthma. Smoked like tobacco, it often gives immediate relief, but must be used with circumspection.

D. Stramonium is usually stated in books to be of American origin, and naturalized in Europe, but there is every reason for believing this to be a mistake, and that the plant, if not indigenous to our quarter of the globe, came to us from the East, where both it and some other species are well known. In America it is common, but only in the same situations as in Europe; the idea therefore of its importation from the New World is a gratuitous assumption unsupported by evidence, and contrary to probability when we consider the oriental derivation of its generic name in so many Arabic dialects, and are aware how much the species increase in number and frequency as we advance eastward. The same opinion is expressed by Prof. Bigelow in his 'Medical Botany of the United States.' It is also mentioned as of eastern origin by Tabernæmontanus (see Tabern. Kranterb. edit. C. Bauhin. Frankfort, 16—). Gerarde tells us that he received seed of the Thornapple, which was a scarce plant in England in his time, from Constantinople, an additional presumption that the species is of eastern, not western, origin. In Hungary it is a pestilent weed, choking the soil as *Mercurialis annua* does in England. I have seen it lining the roadside for miles between Vienna and Buda.

I have reason to believe *D. Stramonium* to be the Jamestown weed mentioned by Abbot in that elegant but not always, as regards nomenclature, correct work, the 'Insects of Georgia,' the blossoms of which are so attractive to *Sphinx Carolina*. In August, 1796, a pair of these fine insects were taken by a Mr. Thomson at W. Cowes, and a fig. of one of them given by Mr. Curtis in his splendid work, the 'British Entomology.' *Datura* is closely allied to the Tobacco, on which this *Sphinx* is said principally to feed.

The American botanists themselves do not consider the Thornapple as originally native to their soil, and indeed its popular name of Jamestown weed (corrupted into Jimson) furnishes pretty conclusive evidence of its migration to the northern section of the Union from one of the oldest colonial settlements in Virginia. It and the purple-stemmed var. (*D. Tatula** of authors) quite cover the vacant lots and waste places of New York and Philadelphia, as if purposely sown for medical use; farther North than these cities I observed it to become gradually scarcer, and hardly to be seen in any part of Lower Canada that I visited.

I found at St. Thomas (Virgin Islands), in April, 1844, a species of *Datura* with pale stems and flowers, and the general appearance of *D. Stramonium*, but essentially differing in its much larger and I think more densely mucronated capsules, which were not ovate but hemispherical, or having their greatest diameter at the base itself. Besides the seed, these capsules contained abundance of a watery juice, and, although on being gathered, with a view of raising plants on my return to England, they were kept perfectly dry on board the vessel, the seeds

* In September, 1845, I remarked a single plant of *D. Tatula* in a cottager's garden at Newbridge, but whether spontaneous there, or purposely introduced, I am unable to say. It is a much larger plant, suffused with purple in its stems and flowers, common in the South-east of Europe and the United States, and is considered by many as a mere variety of the present species, but, as the point is not settled, and that variety, if such it be, is unknown in England, I have not mixed up its description with that of the commoner plant, as constituting but one genuine species.

became quite mouldy from the superabundant moisture, which was unable to escape through the thick walls of the capsule.

Order LV. SCROPHULARIACEÆ, *Juss.*

"*Calyx* 4—5 lobed, persistent. *Corolla* monopetalous, generally irregular, deciduous, with an imbricated æstivation. *Stamens* 4, didynamous, rarely equal, sometimes 2 or 5. *Style* 1. *Stigma* 2-lobed, rarely undivided. *Capsule* (very seldom a berry) 2-celled, 2—4 valved, or opening by pores; the valves entire or bifid, with a dissepiment either double from the inflexed margins of the valves, or simple, parallel and entire, or opposite and bipartite. *Receptacle* of the seeds central, united to the dissepiment, or eventually separating. *Seeds* few or numerous. *Embryo* straight, enclosed in the axis of a fleshy *albumen*. — Herbs, sometimes shrubs, usually with opposite leaves."—*Br. Fl.*

* *Corolla* rotate, 4—5 lobed.

† *Stamens* 5, unequal; *filaments* shaggy.

I. VERBASCUM, *Linn.* *Mullein*.*

Calyx 5-cleft. *Corolla* rotate, unequally 5-lobed, with a very short tube. *Style* and *stamens* declined; *filaments* bearded with coloured hairs. *Capsules* ovate or globose, 2-celled and 2-valved, many-seeded.

A genus of handsome plants, with yellow, whitish or purple flowers, chiefly natives of Europe, the West of Asia, and North of Africa.

§ *Leaves* decurrent, woolly. *Flowers* in a dense oblong spike.

1. *V. Thapsus*, *L.* *Great Mullein*. *High Taper*. *Bullock's Lungwort*. *Vect. Shepherd's Club*. *Flannel Plant*. "Stem simple, leaves all decurrent woolly on both sides, spike of flowers very dense, pedicels shorter than the calyx, corolla concave in the throat about twice as long as the calyx, 2 stamens longer glabrous their anthers very shortly decurrent."—*Br. Fl.* p. 303. *E. B. t.* 549.

β. *Leaves* less downy, bracts longer than the calyx. *V. thapsiforme*, *Schrad.*?

On dry banks, walls and waste places, along hedges, roadsides, in woods and rough stony pastures, in a sandy, gravelly, and above all chalky soil; common. *Fl.* June—August. ♂.

E. Med. — About Quarr abbey and at Binstead, in many places, as on a steep bank by the brook at Stonelands, and on rubbish-heaps near the brick-kiln. Wood between Yarbridge and Yaverland. East-end, by Luccombe, abundantly, and of gigantic growth, often 6 or 7 feet high. Between Cowes and Newport; common in most parts of the island, *B. T. W.*

* *Mullein*, in French *Molène*, doubtless from *mollis*, soft or downy, though the classical *Gerarde* seems rather to think it is a corruption of *woollen*! a truly homespun conceit.

W. Med.—Very common about Carisbrooke, on banks by the road going to Buccombe.

β. In a little lane between Brading down and the lane leading from Adgeston to Morton, *Dr. Bell-Salter* !!

Capsules large, densely imbricated, canescent, with yellowish gray stellate pubescence easily removed by friction, broadly ovoid and subcompressed, dehiscing by a lateral furrow and partially at the summit of each valve. *Seeds* numerous, dull brown, very unequal in size and shape, mostly prismatic or angular or abruptly truncate, others oblong, tapering, obtuse or somewhat pointed, rough with rows of deep depressions and intermediate tubercular points.

This species abounds, both in the United States and in Canada, in neglected fields, old pastures, &c., where, like many of the supposed foreign weeds of that country, it is even more prevalent than in its native Europe.

§§ *Leaves not decurrent, more or less woolly beneath, nearly glabrous above.*
Flowers fascicled, in a long spike or raceme.

2. *V. nigrum*, L. *Dark Mullein*. Leaves ovato-lanceolate pubescent on short footstalks, flowers in a long simple or branched spike, calyx-segments linear acute. *Br. Fl.* p. 304. *E. B.* i. t. 52. *Fl. Lond.* iii. *Fl. Dan.* vii. t. 1088. *Schrab. Mon. Verb.* sect. ii. p. 25.

In dry gravelly, sandy or chalky pastures, on hedgebanks, by roadsides and borders of fields, but very local. *Fl.* June—October. 24 ex M. et K. ♂.

E. Med.—In several places about Arreton, and abundantly along the hedgebanks of two fields on either side of the road from thence to Merston, near the foot of St. George's down. On a bank by Alverstone farm, at the entrance of the lynch.* Near Ryde, *Miss Roberts*! Near Arreton and Merston, *Mr. W. D. Snooke* !!!

Root perennial. *Stem* erect, usually from 1 to 3 or 4, sometimes 5 or 6 feet in height, straight, mostly simple but often paniculately branched, solid and filled with a beautiful tissue of pentagonal cells, acutely angular and channelled, mostly purplish and somewhat terete below, clothed with a more or less dense woolly pubescence, composed of curiously branched hairs jointed internally. *Leaves* all (excepting the uppermost on the stem) stalked, very variable in size and shape, mostly ovate or ovate-lanceolate, rounded or cordate at the base, mostly acute, sometimes obtuse, deep dull grayish or blackish green, strongly veined and wrinkled, downy or sometimes nearly glabrous above, paler and more or less woolly beneath, especially along the principal nerves, undivided or somewhat lobed, and even, it is said, with the base of the lowermost sometimes lyrate-pinnatifid (*Bertol.* l. c.), more or less equally crenato-serrate; *radical* and lowermost stem-leaves often very large, 16 or 18 inches long, excluding the petiole, by 8 or 10 inches wide, on deeply caniculate semiterete footstalks, of very variable length, and mostly, like the midrib of the leaf, purplish; *superior* stem-leaves very shortly stalked, often lanceolate and obscurely crenate, the uppermost of all usually quite sessile and slightly clasping, very broadly ovate, with long points and quite entire. *Flowers* very numerous, in clusters of about from 4 to 6 or 10 together, crowded into a leafless, gradually elongating cylindrical and spicate raceme either simple or branched below, the branches upright and much shorter than the centre spike or proliferous continuation of the stem, which is often 18 inches or more in length. Each *fascicle* is subtended by a common *bract*, of which the lowermost are linear or ovate at base, with long taper points, and mostly longer than

* Lynch is a name applied to several *woods* in the Isle of Wight, but I do not know the precise limitation of the term. The British word for a grove is said to be *llyn*; perhaps both that and the modern provincialism may have the same origin.

the pedicels, those higher up subulate and shorter than the expanded flowers; all with incurved and ascending points. *Pedicels* when in flower and fruit elongated, very unequal, mostly 2 or 3 times as long as the calyx, cylindrical, stellate-pubescent, with or without one or more subulate bracts at their base. *Calyx* very deeply cleft, not half as long as the corolla, downy outside; *sepals* linear, subulate, acute, single-ribbed. *Corolla* bright yellow, sometimes, it is said, white, about 9 or 10 lines in diameter, deeply 5-cleft, the segments obovate-oblong, a little unequal and downy externally, commonly marked around the orifice of the very short funnel-shaped throat in a stellate form, with 5 purplish brown somewhat lunate spots intersected by a narrow streak, and within these a row of smaller more irregularly shaped spots of the same colour. *Stamens* nearly equal, the 3 superior ones rather the shortest, ascending; *filaments* stout, thickening upwards, densely bearded in their middle part with long, spreading, simple hairs of a palish violet, their tips slightly enlarged or glandular; *anthers* nearly semi-circular, strongly compressed, 1-celled? bursting along their upper margin; *pollen* bright orange verging on scarlet. *Germen* globose, densely clothed with snow-white rigid hairs; *style* long, ascending, slightly dilated upwards, glabrous or sometimes hairy below; *stigma* capitate, globose, glandulose-pilose, greenish. *Capsules* small, about as long as the calyx, ovato-globose, brownish and tomentose-pubescent, very obtuse, tipped with the style. *Seeds* numerous, dull brown, less abruptly truncate than those of *V. Thapsus*, otherwise scarcely differing from them in size, shape or sculpture.

Our Vectian plant is the variety figured in the continuation of the Fl. Londi-uensis, and differs from that of E. B. in having larger and perhaps rather paler flowers. The latter, which I have observed in Suffolk, is, I think, of more slender habit and still deeper green.

This species obtained the name of *nigrum* either from the comparatively dark lurid green of the leaves, or, as Wahlenberg suggests, from its turning black in drying.

§§§ *Leaves all decurrent, glabrous on both sides or nearly so. Flowers solitary, in pairs or few together, in a long, racemose, lax spike.*

3. *V. Blattaria*, L. *Moth Mullein*. "Leaves crenate oblong glabrous, radical ones sinuate, upper ones acuminate, flowers solitary stalked remote collected into an elongated branched glandular-hairy raceme, pedicels much longer than the calyx."—*Br. Fl.* p. 303. *E. B. t.* 393.

β. Flowers white.

On chalky, gravelly or clayey banks, pastures and by waysides; very rare in a truly wild state: less unfrequent with white flowers in stations usually more or less suspicious. *Fl.* June—October. ☉, *Sm. Hook.*; ♂, *DC.* &c.

E. Med.—Under the wall of Binstead churchyard, but evidently the outcast of the adjoining garden.

W. Med.—In a retired lane called Gallants leading from Ganson's or Gaskin's Barn towards Carisbrooke, certainly wild, and with the usual yellow flowers of the species, 1839.

β. The more common var. in this island, but too often, I fear, escaped from gardens. On the Dover, occasionally, near Ryde Castle. In Binstead churchyard, but in both places the outcast of gardens. At Swainston, *Mr. James Hammond*. By Fern hill, *Mr. J. Tayler*, who thought it indigenous, but being the white-flowered var. it was probably only an escape, as I have [not?] since observed it there!!!

Capsule the size of a peppercorn, nearly globular, brownish, glabrous and wrinkled. *Seeds* numerous, blackish brown, covered with deep longitudinal and transverse furrows and prominent intermediate points, attached to a round central receptacle connected with the inflexed margin of the valves.

V. Blattaria is very plentiful in the middle States of the Union, in fields and by roadsides, both with white and yellow flowers.

†† *Stamens 2; filaments glabrous.*

II. VERONICA, Linn. Speedwell.

"Corolla 4-cleft, rotate, lower segment narrower. *Stamens 2. Capsule 2-celled.*"—*Br. Fl.*

A very numerous genus, indigenous to cold or temperate climates, but widely dispersed over the globe. Europe possesses a large proportion of those species known to botanists, which are for the most part herbaceous plants of humble growth, except a few which are shrubby, and even small trees in S. America and New Zealand.

§ *Racemes axillary. Root perennial.*

1. *V. Anagallis*, L. *Water Speedwell*. "Racemes opposite, leaves sessile lanceolate serrated, capsule elliptical slightly emarginate, stem erect."—*Br. Fl.* p. 290. *E. B.* t. 781.

In ponds, ditches, slow streams and muddy watery spots, but not very frequent. *Fl.* June—August. 24, oftener ☉ ex Wahlenb.

E. Med.—By the great pond near St. Lawrence. About Newchurch. Wet places near Ryde, and at Brading. *W. Wilson Saunders, Esq.*

W. Med.—In marsh-ditches at Freshwater Gate, sparingly. On Schoolhouse green, Freshwater. Common in watery places at Brixton. In the moat at Woolverton, by Shorwell, in plenty. By the mill at Lower Knighton. Pond at Carisbrooke upper mill, 1845.

2. *V. Beccabunga*, L. *Brooklime*. "Racemes opposite, leaves stalked elliptical obtuse subserrated glabrous, stem procumbent at the base and rooting."—*Br. Fl.* p. 290. *E. B.* t. 655.

In and on the margins of clear shallow brooks, ditches, pools, springheads and muddy slashes; abundantly. *Fl.* May to end of summer. 24.

The trivial name of this plant is a barbarous corruption of the German appellation, *Bachbunge*.

3. *V. Chamædrys*, L. *Germander Speedwell*. *Vect. Bird's-eyes*. "Racemes elongated many-flowered, leaves cordate-ovate nearly sessile inciso-serrate, stem bifariously hairy, capsule flat obcordate deeply notched ciliated shorter than the calyx."—*Br. Fl.* p. 291. *E. B.* t. 623.

β. Leaves all shortly stalked, upper ones ovate-oblong, acute.

γ. Flowers very pale, nearly white.

In woods, groves, meadows, pastures, hedges and grassy shady situations, as orchards, &c.; everywhere common. *Fl.* April—June. 24.

β. In the lane or road leading to Haven-street through Firestone copse, on the hedgebank a little beyond the farm at Kite Hill, *Mr. Thos. Meehan!*

γ. In a lane betwixt Kerne and Alverstone, with the ordinary blue-flowered kind, in some abundance. In Steephill grounds.

4. *V. montana*, L. *Mountain Speedwell*. *Mountain Madwort*. Racemes lax few-flowered, leaves cordato-ovate stalked inciso-serrate, stem hairy all round, capsule orbicular 2-lobed flat much larger than the calyx. *Sm. E. Fl.* i. p. 23. *Br. Fl.* p. 291. *E. B.* xi. t. 766. *Curt. Br. Entom.* xv. t. 678. *Curt. Fl. Lond. fasc.* iv. t. 2. *Jacq. Fl. Aust.* ii. 6, t. 109.

In damp shady groves, woods, copses, and on moist hedgebanks, in many parts of the island, but especially of East Medina; abundantly. *Fl.* April—July. 24.

E. Med.—Abundant about Ryde, as in Quarr copse, and on the hedgebank of the garden at Binstead. Plentiful in the wooded ground between Quarr abbey and Ninham farm. Marina wood, by Apley. Woods about the Priory. New copse, near Wootton bridge. Woods about Shanklin. In Great Wood, Hungerberry and other copses, occasionally. Woods at Appuldurcombe. Wood between Newport and Ryde, and at Shanklin, *D. Turner, Esq.*, *Fl. Vect.*

W. Med.—Frequent in woods at W. Cowes, as in that by Mrs. Goodwin's house, and about the new church in her grounds. Swainston. Common in New Barn Hummet, Calbourne. Lorden copse.

Root very small, slender, emitting one or more trailing or procumbent stems a foot or two in length, which again take root at intervals, with bundles of slender, brownish, branched fibres, and send up erect or ascending flowering branches, which like itself are round, solid, copiously clothed all over with soft, white, spreading, gland-tipped and jointed hairs, the flowering extremities upright. *Leaves* opposite, stalked, bright pale green, broadly ovate, not cordate at the base, distantly and sharply inciso-serrate, the terminal serrature very large, roundish or pointed; strongly but not rugosely veined, clothed on both sides with acute (not glandular), jointed, erect pubescence, shorter and less copious than in *V. Chamædrys*. *Petioles* semiterete, about half the length of the leaves or rather more, very hairy, without stipules. *Racemes* axillary, alternate or occasionally opposite, erect, much longer than the leaves, few- (about 4—7) flowered. *Flowers* smaller than in *V. Chamædrys*, but not less elegant, pale purple or lilac, beautifully pencilled with darker lines. *Pedicels* hairy, erect, much longer than the narrow linear-lanceolate bract at their base. *Calyx* hairy, segments ovate, acute, 3-nerved, fringed with gland-tipped hairs. *Corolla* exceeding the calyx, but proportionably much shorter than in *V. Chamædrys*, scarcely at all hairy, as in that, about the mouth of the very short tube. *Stamens* and *style* as in *V. Chamædrys*, but faintly tinged with purple. *Capsules* much larger than the calyx, veined, pale whitish brown, orbicular, disciform, 2-lobed, emarginate at the summit and tipped with the long slender style, appearing denticulated from the glandular bases of the jointed hairs that fringe the margin of each valve, every hair being also tipped with a minute gland. *Seeds* about 3 or 4 in each cell, pale yellow, nearly orbicular, flat, smooth and shining, marked on one side near the centre with a brown spot surrounded by a tawny areola and another dark spot at the base.

Very nearly allied to the last, but essentially distinguished by its pale green, sharply serrated, much longer stalked leaves; by its stem, which is hairy all round; by the fewer, smaller, and very differently coloured flowers, and the singularly rounded capsule.

This species, from the notice taken in 'English Botany' of its discovery by Sherard in Charlton wood, seems to have been constantly confounded with *V. Chamædrys*, and therefore esteemed rare. It is now ascertained to be by no means uncommon, though perhaps local. Yet it appears strange that a species so widely distributed over Britain as the present should have been so little known as to render its discovery by Sherard a matter worthy of record, and still stranger, as Sir W. Hooker remarks, that it should have been confounded with the more common *V. Chamædrys*, from which its long trailing stems, hairy all round, stalked leaves, singularly compressed capsule, and its much smaller and paler flowers, afford ample means of discrimination. That the talented and scrutinizing Scopoli did not seize the essential characters of our *V. montana* we have his own evidence to prove (*Fl. Carn.* i. p. 14). Columna's figure, so much praised by Sir J. Smith, correctly depicts the stem, leaves and general habit, but represents the flowers with 4 stamens, and in other respects greatly unlike the original. The trivial name *montana* is not so applicable to this as to many species of the genus, the plant affecting low as well as elevated situations in Britain and on the Continent. The singular resemblance of the orbicular compressed capsule to the pod of *Biscutella* might have suggested the name of that genus as a more appropriate specific name for this species of *Veronica*. The whole herb, in common with a few of its allies, turns black in drying or shortly afterwards.

A variety with the flowers of a delicate rose-colour streaked with purple lines is not uncommon about Ryde.

5. *V. scutellata*, L. *Marsh Speedwell*. Racemes alternate axillary, pedicels divaricate reflexed in fruit, leaves linear somewhat toothed, stem reclining. *E. B. xi. t. 782. Sm. E. Fl. i. p. 21. Br. Fl. p. 290.*

In spongy turfy bogs, wet meadows, and by the sides of pools and ditches; rare. *Fl. June—August. 24.*

E. Med.—In boggy meadows near the Wilderness.

W. Med.—In boggy meadows between Stroud farm and Cridmore. In a swampy pool amongst long grass near Hampstead farm, in tolerable plenty. Edges of a pool, on a common called Goldens, in the parish of Freshwater. By the stream a little above the mill at Lower Knighton, *W. Wilson Saunders, Esq. !!!*

Herb smooth when growing in wet places, "becoming hairy or even hoary in dry or barren ground" (*Sm.*) Root very long, fibrous and creeping. Stem simple or branched, decumbent, rooting at the joints, at last ascending, from a few inches to a foot or upwards in length, slender and brittle. Leaves opposite, sessile, smooth and shining, linear-lanceolate, acute, their edges a little incurved, with very distant glandular and shallow tooth-like serratures, so small that the leaves seem at first sight entire. Stipules none. Flowers small, flesh-coloured in darker lines, in axillary, alternate, panicle racemes longer than the leaves. Pedicels divaricating, reflexed in fruit, each with a linear bractea at the base. Sepals ovate-lanceolate, much shorter than the corolla. Capsule pale brown, of 2 roundish shield-like lobes (*scutellata*), much compressed, many-seeded. Seeds in a double row, "orbicular, rugged or minutely dotted" (*Leighton*).

6. *V. officinalis*, L. *Common or Male Speedwell*. "More or less pubescent, racemes spicate, leaves shortly stalked ovate-serrated, stem procumbent creeping, capsule obovate triangular truncated or with a wide shallow notch."—*Br. Fl. p. 291. E. B. t. 765.*

On sandy banks and pastures, in dry sterile woods and heathy ground; not unfrequent. *Fl. May—August. 24.*

§§ *Raceme terminal, subspicate. Root perennial.*

7. *V. serpyllifolia*, L. *Thyme-leaved Speedwell. Paul's Betony*. "Raceme somewhat spiked many-flowered, leaves broadly ovate or elliptical very obtuse slightly crenate, capsules inversely reniform as long as the style."—*Br. Fl. p. 289. E. B. t. 1075.*

In open sandy fields and waste places, in moist pastures, woods, and damp spots by roadsides, ditches, &c.; everywhere. *Fl. May, June. 24.*

§§§ *Raceme terminal, subspicate. Root annual.*

8. *V. arvensis*, L. *Wall Speedwell*. "Leaves cordate-ovate serrated, the lower ones petiolate, the upper or bracteas sessile lanceolate quite entire longer than the flowers, pedicels shorter than the calyx, capsules broadly obcordate compressed emarginate with roundish ciliated lobes, seeds 12—14 compressed flat on the one side, stem ascending."—*Br. Fl. p. 292. E. B. t. 734.*

In dry barren or sandy pastures, on walls, hedgebanks and amongst corn; pretty frequent. *Fl. March—June. ☉.*

E. Med.—Not uncommon about Ryde; in a field between Quarrabbey and Fishbourne. Abundant on walls and in cornfields about Sandown, Luccombe and Shanklin. Above Sandown bay.

W. Med. — Cornfields, &c., at Freshwater. Walls of Carisbrooke castle, *Dr. Bell-Salter !!!*

This species resembles at first sight *V. agrestis* or *V. polita*, differing however in the following particulars. Herb bright green. *Stems* hairy, a little ascending, or in the smaller plants quite upright. *Leaves* hairy, the lower ones cordato-ovate, with a few coarse tooth-like serratures, very shortly petiolate, those higher up quite sessile, gradually becoming narrower, more pointed and entire; the uppermost bractescent, quite entire, or with a single tooth at the base. *Flowers* solitary, very small, bright blue, nearly sessile amongst the upper leaves. *Sepals* lanceolate, very unequal, the 2 lower ones largest, all widely spreading in fruit. *Capsules* pale brown, shorter than the calyx, compressed, inversely heart-shaped, deeply 2-lobed, ciliated on the margin, otherwise quite glabrous. *Seeds* several in each cell, yellowish and pellucid, ovate, compressed and slightly wrinkled.

§§§§ *Flowers axillary, solitary. Stems procumbent.*

9. *V. hederæfolia*, L. *Ivy-leaved Speedwell*. "Leaves all petiolate cordate with 5—7 large teeth or lobes, segments of the calyx cordate ciliate, capsule of 2 turgid lobes, seeds 2—4, stem procumbent."—*Br. Fl.* p. 291. *E. B. t.* 784.

In waste and cultivated ground, fields, gardens, and on hedgebanks; most abundantly. *Fl.* March—July. ☉.

Root annual, slender, with a few pale thready fibres. *Stems* much branched from the very base, the branches prostrate or a little ascending at their extremities, round, leafy, brittle, with a tough central medullary fibre, from a span to a foot or 18 inches in length, slightly tinged with purple near the base, clothed pretty copiously with long, white, soft spreading hairs, disposed, as *Dr. Darlington* remarks, in lines usually 3 in number, but irregular and unequal in their length and direction, the intermediate spaces partially beset with the same pubescence. *Leaves* numerous, pale dull green, somewhat fleshy, hispid with short, scattered, erect, simple hairs, a few of the lowermost usually opposite, the rest alternate, about half an inch in length exclusive of the mostly shorter flattish petioles, roundish or roundish-ovate in circumscription, cordate at the base, often rather broader than long, the lowermost and earliest frequently nearly or quite entire and heart-shaped, with a single, depressed, very straight median nerve; the rest 3—5 lobed, the lobes obtuse, entire at the margins, the basal pair smallest, sometimes bifid and often obsolete, the central lobe much the largest, very broad and blunt, each leaf with 3 or 5 strong depressed nerves on the upper surface, of which the lateral ones are directed to the sinuses, the middle nerve running straight to the apex of the central lobe. *Flowers* axillary, solitary, small, on peduncles downy like the stem, considerably lengthened and spreading or recurved in fruit. *Calyx* much enlarged after flowering; *sepals* ovato-cordate, subequal, entire, acute, obscurely 3—5 nerved, conjoined at their reflexed bases, the margins fringed with long white hairs, otherwise glabrous. *Corolla* shorter than the calyx, pale blue or purplish (sometimes nearly white), with purple streaks, the throat villous. *Anthers* bluish. *Style* thick, angular, not tapering; *stigma* glanduloso-pilose, flat. *Capsule* didymous, subgloboso-quadrangular and almost 4-lobed, depressed at top and crowned with the style, quite glabrous, rather shorter than the calyx. *Seeds* 1 or 2 (mostly 2) in each cell.

The leaves resemble less those of the Ivy than of the pretty *Linaria Cymbalaria*. The flowers are widely expanded only in very fine dry weather. This is quite a spring plant, and seldom to be found after the month of June.

Our lay- and tillage-lands are often covered with the Ivy-leaved Speedwell in the spring and earlier summer months.

10. *V. agrestis*, L. *Green Procumbent Speedwell*. "Leaves all petiolate cordate-ovate inciso-serrate about as long as the flower-stalks; segments of the calyx oblong obtuse, stem procum-

bent, capsule of 2 turgid keeled lobes, cells about 6-seeded." — *Br. Fl.* p. 292. *E. B. S.* t. 2603.

Common in waste and cultivated ground, fallows, on and under walls, banks, &c. *Fl.* March—December. ☉.

Whole plant somewhat hispid with white bristly hairs. *Pedicels* rather variable in length, but never greatly exceeding the *leaves*; usually they are much shorter.

A singular variety of this species has been observed for some years growing amongst long grass in the grounds at Steepphill, with an upright stem, and a solitary terminal flower, of a fine blue, on a long pedicel, and nearly as large as those of *V. Chamædrys*.

11. *V. polita*, Fries. *Gray Procumbent Speedwell*. Procumbent, leaves all petiolate cordato-ovate inciso-serrate, calyx-segments broadly ovate acute scarcely longer than the two turgid keelless lobes of the capsule whose cells are many-seeded. *V. agrestis*, *E. B.* xi. t. 783. *Borrer* in *E. B. Suppl.* t. 2603. *Fl. Dan.* t. 449. *V. agrestis* β., *Br. Fl.* p. 292.

In the same places as the last, and scarcely less common. *Fl.* March—December. ☉.

Very closely allied to the preceding species, from which it is readily known at a distance by its bright blue flowers and grayish herbage, and on a nearer examination by the more deeply cut or serrated leaves; the broadly ovate and pointed sepals, which are almost equal to, or but little exceeding, the ripe capsule in length; in the very turgid subglobose lobes of the capsule, which are quite rounded or obtuse along their suture, without any visible marginal attenuation or keel; and, lastly, by having many more seeds in the cells (mostly from 10 to 12 in each), and smaller.

*12. *V. Buxbaumii*, Ten. *Buxbaum's Speedwell*. "Leaves all petiolate cordate-ovate inciso-serrate shorter than the flower-stalks, segments of the calyx lanceolate acute when in fruit much divaricated, stem procumbent, capsule obcordate-triangular of two turgid divaricated lobes which are compressed upwards and sharply keeled, cells 8—12 seeded."—*Br. Fl.* p. 292. *E. B. Suppl.* xxxviii. t. 2769. *Bert. Fl. Ital.* i. p. 102. *Fl. Danica*, t. 1982. *Johnson's Fl. of Berw.-on-Tweed*, p. 225, cum icone.

In cultivated fields, gardens, on hedgebanks and waste ground about towns; rare, and certainly introduced. *Fl.* March. ☉.

E. Med.—A weed in the garden of a shoemaker, named Herbert, on Royal heath, at the S. end of the heath, near the Coast-guard Station; also in an adjacent field and hedgebanks. Sparingly about the Sandown barrack-buildings. In considerable abundance amongst the new plantation at E. Cowes park. In very great profusion on the waste lots at E. Cowes park. In the grounds at Binstead, *A. Hambrough, Esq.!* [At St. John's, near Ryde, in a field at the back of St. John's kitchen-garden, and in cultivated ground by the gardeners cottages on the property of G. Young, Esq.; also at Bembridge, by the footpath opposite Tyne Hall, *Dr. Bell-Salter, Edrs.*]

Root slender, branched and fibrous. *Stem* one or more, procumbent, with ascending tips, oppositely branched immediately above the root and for a short distance upwards, afterwards simple, from a few inches to 1 or 2 feet in length, according to its age, often rooting from the lower joints, stout, terete, greenish or purplish, clothed with copious long, white, spreading hairs, partly straight and partly curved upwards, somewhat disposed in two opposite lines, and intermixed

with a shorter more close pubescence. *Leaves* bright pale green (not at all glaucous), a few of the lowermost only usually opposite, all the rest alternate, very shortly stalked, broadly ovate, cordate at base, rounded or subacute, coarsely and for the most part deeply incised-serrate. *Peduncles* solitary, axillary, single-flowered, downy, mostly but not always longer than the leaves; in the specimens before me they are sometimes only equal to and even shorter than the latter, spreading or patent when in fruit and a little recurved at the apex. *Sepals* ovate-lanceolate, enlarged in fruit and then divaricating in pairs, rather acute and unequal, two opposite ones of the four being somewhat less than their fellows, pellucidly 3-nerved, the lateral nerves indistinct and evanescent below the summit; margins of the sepals flat, not reflexed, and ciliated with white hairs, like those which clothe their base, but much shorter. *Corolla* large (the size of *V. Chamædrys*), bright sky-blue streaked with dark purple, variable in size, the flowers produced in spring and early summer being considerably larger than the later blossoms, as remarked to me by Dr. Bell-Salter, which is an observation I have found to be correct. *Segments* of the corolla slightly pointed, the 3 superior ones broadly cordato-ovate, the lowermost smaller and narrower, usually paler or even white; tube closed by connivent pellucid hairs. *Stamens* with white much dilated *filaments*; *anthers* deep blue at first, finally black; *pollen* whitish, irregular in shape, the granules mostly oblong or elliptical and truncate, with a central furrow. *Style* persistent, slender, reddish, a little dilated upwards, as long as the stamens; *stigma* whitish, capitate, glanduloso-pilose. *Capsule* obcordate, much broader than long, subcompressed, very hairy at top, the disk glabrous; of 2 turgid, divaricating, ovato-orbicular, often obscurely pointed lobes, with thin, acute, ciliated margins, brownish white and reticulate-rugose when ripe, shorter than the enlarged and now widely spreading or divaricate sepals. *Seeds* about 7 or 8 (or even 12, *Benth.*) in each cell, whitish and subpellucid, ovoid, hollowed on the inner side, convex and subtuberculato-rugose on the outer.

This species, which is of Asiatic and South-eastern European origin, and has now become naturalized in many parts of Britain, is easily recognized by the much larger size of its bright blue flowers and pale green leaves, by the long, slender and nearly straight pedicels, the ovate-lanceolate acuminate sepals, and the compressed sharp-edged lobes of the broadly cordate capsules, with about 8 seeds in each cell.

** [*Corolla ringent.*—Edrs.]

III. SCROPHULARIA, Linn. Figwort.

"*Calyx* 5-lobed (or in *S. vernalis* deeply 5-cleft). *Corolla* subglobose, its *limb* contracted with two short *lips*; the upper with 2 straight lobes and frequently a small *scale* or abortive stamen within it; the lower 3-lobed, the two lateral lobes straight, middle one decurved. *Capsule* 2-celled, 2-valved, septicidal, the margins of the valves turned inwards."—*Br. Fl.*

1. *S. nodosa*, L. *Knotty-rooted Figwort. Great Figwort.* "Leaves cordate-triangular acute glabrous doubly and acutely serrate, lower serratures largest, stem with 4 acute angles, cymes lax, bractæ small lanceolate acute, sepals with a narrow membranous margin, scale of upper lip transversely oblong slightly notched, root tuberous."—*Br. Fl.* p. 297. *E. B. t.* 1544.

In damp shady places, woods, thickets, hedges, moist pastures, banks of streams, &c.; very frequent. *Fl.* June—August. *Fr.* August, September. 2f.

Capsules pale brown, ovato-globose, mucronato-acuminate, veined and glabrous. *Seeds* numerous, blackish, oblong or roundish, obtuse, deeply and longitudinally furrowed, punctato-rugose.

2. *S. aquatica*, L. *Water Figwort. Water Betony.* "Glabrous, leaves crenate-serrate cordate-oblong obtuse, petioles winged, stem 4-winged, cymes dense corymbose 8—15 flowered, bractæas linear obtuse, sepals with a broad membranous margin, scale of upper lip roundish uniform entire, capsule pointed, root fibrous."—*Br. Fl.* p. 298. *E. B.* t. 854.

By the sides of ditches, ponds and rivers, in wet hedges, thickets and other watery places; extremely common. *Fl.* June—August. 24.

Capsules like those of the preceding, but rather larger, of a deeper brown, more globose and less acutely mucronato-acuminate. *Seeds* also rather larger and darker, otherwise exactly similar to *S. nodosa*.

IV. DIGITALIS, Linn. Foxglove.

"*Calyx* in 5 deep segments. *Corolla* campanulate, inflated beneath; *limb* obliquely 4—5 lobed, unequal. *Capsule* ovate, 2-celled, many-seeded, 2-valved, septicidal."—*Br. Fl.*

1. *D. purpurea*, L. *Purple Foxglove. Poppy.* "Sepals ovate-oblong acute 3-nerved downy, corolla obtuse scabrous externally, upper lip scarcely divided, lower one with ovate rounded segments, leaves ovate-lanceolate crenate or serrate downy."—*Br. Fl.* p. 299. *E. B.* t. 1297. *Curt. Fl. Lond.* i. fasc. 1.

β. Flowers white.

In dry hilly or heathy pastures, woods, hedges, and on banks by roadsides; common in many places* on gravel or sand. *Fl.* May—August. ♂.

E. Med.—Not unfrequent in the immediate vicinity of Ryde. Hedgebanks along the high road between St. John's and the turning off to Westridge, and along the road to Smallbrook.

W. Med.—Common about Newport, on St. George's down, and profusely below Marvel copse. Woods near Norris castle, abundant. Rowledge.

β. About Steephill, A. Hambrough, Esq. A solitary specimen on the Wilderness, June, 1842.

Root a bundle of yellowish, woody, copiously branched fibres, small for the size of the plant, and creeping horizontally just below the surface. *Stem* erect, simple or occasionally with a few short branches below, from about 3 or 4 to 6 or 7 feet high or even higher, and from a finger thick to an inch in diameter at base, firm, hollow below, bluntly angular by the decurrence of the leaves and flower-stalks, greenish or purplish gray, and covered with an extremely short close pile or pubescence, consisting of erect gland-tipped hairs. *Leaves* alternate, ovate or oblong-lanceolate, soft, dull green, wrinkled and very finely pubescent above with erect simple hairs, much paler and almost hoary underneath with longer more copious pubescence, especially on the prominent network of veins, scarcely acute, evenly crenate, the serratures very obtuse and rounded, with a small callosity; lower stem- and root-leaves large, on stout, decurrent, winged, semiterete petioles deeply channelled above, about as long as the leaf, woolly; upper stem-leaves smaller, on shorter stalks, at length becoming sessile and bractiform. *Flowers* very large and numerous, gracefully drooping and imbricated in a crowded unilateral and terminal raceme or spike often several feet in length. *Peduncle* single-flowered, nodding, cylindrical, decurrent, suberect in fruit, mostly about as

* Mr. Thomson of Manchester, in an essay on the "Relations between Geological Strata and the Plants growing on their superincumbent Soils" (London's Mag. of Nat. Hist. vol. iii. p. 418), asserts that, of this beautiful, but, as he calls it, noxious flower, the Isle of Wight scarcely boasts a single specimen!

long as the calyx, villous, solitary in the axil of a lanceolate-acuminate spreading or reflexed *bract*, usually about as long or half as long again as itself. *Calyx* campanulate, rather longer than the tube of the corolla, deeply 5-partite, the sepals very unequal in size, the 2 lowermost very broadly ovato-elliptical, the 2 above these elliptic-lanceolate, the fifth and superior much narrower, lanceolate; all acute or somewhat acuminate, about 5-nerved, spreading and enlarged in fruit. *Corolla* very large, drooping, from 2 to 2½ inches long, and about an inch wide across the mouth, the limb tubuloso-campanulate, compressed horizontally, the upper side flattish, with a prominent ridge or keel (fold of the corolla) along its centre not extending to the margin of the upper lip, ventricose or inflated beneath, strongly contracted at base into the very short, white, firm and shining, 5-lobed tube, from which the limb is deflexed at an obtuse angle; quite glabrous externally, of a fine purplish pink and shining, paler and nebulously mottled white and purple underneath, with several purple rather indistinct rib-like streaks running longitudinally; obliquely 2-lipped or rather 4-lobed, the upper lobe extremely short, truncate and almost obsolete, slightly and obtusely emarginate or nearly entire, ascending, the two lateral lobes as long as the upper one and similar in shape, but smaller and quite entire; lowermost lobe the longest, spreading or reflexed, entire, rounded or occasionally slightly pointed, within rugose, sparsely beset with long, white, erect, jointed hairs, and beautifully speckled with ocellated spots, consisting of deep purple dots in white nebulous rings, extending backwards to the top of the tube, where they coalesce for the most part into a pale-coloured field, thickly dotted with brownish purple, occupying the whole of the lower and inner side of the corolla. *Stamens* 4, without the least rudiment of a fifth, ascending and converging in pairs close beneath the style, and applied with it to the opposite side of the corolla to about half the length of the limb: *filaments* white, broad, flat and glabrous, of the longer or outer stamens much curved inwards at their origin, those of the shorter pair but slightly bent; *anthers* very large, bright yellow, slightly hairy, mostly with a few purple dots, lobes ovoid-oblong, united only at base, somewhat pointed, bursting anteriorly. *Ovary* oblong-conical, very hairy, sessile, surrounded at base with a yellowish, lobed, angular gland, obliquely tapering at top into the style. *Style* as long as the outer stamens, cylindrical, somewhat arcuate, slightly hairy in its lower half, glabrous and purplish above, horizontally cleft at apex into two equal, subacute, appressed or diverging lobes, resembling the mouth of a serpent. *Capsules* large, ovate, downy, tipped with the long withered style. *Seeds* very numerous, dull reddish brown, small, oblong and truncate, with a lateral furrow, covered with a network of deep angular cells like a honeycomb.

In our species, and probably in all the rest of this genus, the capsule is imperfectly 4-valved; of these valves, the lateral pair of sutures, which by their inflexed margins form through their junction with the placenta the 2 cells, split widely open, whilst of the 2 remaining sutures, whose edges do not project into dissepiments, the upper dehisces in the centre above, the lower continuing closed as a simple commissure. The same structure is seen in *Collinsia bicolor*, and probably in many other genera of this natural order.

I found, June 14th, 1849, in a hedge betwixt Stokes bay and the Grange farm, near Gosport, a specimen of *D. purpurea* having near the centre of each flower a pair of small subacute spurs hollow within and pointing backwards, in shape, &c., exactly as in *Linaria*.

V. ANTIRRHINUM, Linn. Snapdragon.

"*Calyx* 5-partite. *Corolla* personate, gibbous at the base (no evident spur); its *mouth* closed by a projecting palate. *Capsule* 2-celled, oblique, opening by 2—3 pores at the extremity."—*Br. Fl.*

*1. *A. majus*, L. *Great Snapdragon*. *Calve's-snout*. "Leaves lanceolate alternate, those of the branches opposite, flowers

spiked, segments of the calyx ovate obtuse much shorter than the corolla, upper lip of corolla bifid."—*Br. Fl.* p. 299. *E. B. t.* 129.

Naturalized on walls and old buildings; escaped from adjacent gardens; not unfrequent. *Fl.* June—August. *U.*

E. Med.—On the garden-wall of Morton house, by Brading. Abundantly on old walls at E. Cowes.

W. Med.—On several garden-walls at Newport, Yarmouth, &c. Yarmouth castle and many other buildings in various parts of the island, *Mr. W. D. Snooke !!!*

Root of several long, stout, branched fibres, very hard, stiff and woody. *Stems* numerous, slightly ascending at base, afterwards erect, from 1 to 2 feet or more in height, round, leafy, glabrous below, hairy above with brownish gland-tipped pubescence, emitting short barren shoots from the axils of the leaves, otherwise mostly simple. *Leaves* numerous, scattered, alternate, opposite or partly whorled, dull green, more or less deflexed and recurved, somewhat fleshy, obscurely veined, narrow-lanceolate, the larger and lower about 2 or 3 inches long and $\frac{1}{3}$ rd to $\frac{1}{2}$ an inch wide, attenuated below or subpetiolate, acute, with a short somewhat sudden or abrupt point. *Flowers* subimbricated, close, in a terminal, spike-like, constantly elongating raceme, on short, thick, erect, glandulose pilose peduncles. *Bract* solitary, boat-shaped, acute and incurved, about as long as the flower-stalks they subtend, very hairy. *Calyx* 5 or 6 times shorter than the corolla, oblique; *sepals* broadly ovate, obtuse, concave, bluntly keeled, scarcely nerved, hairy externally. *Corolla* $1\frac{1}{2}$ inch long, in the truly wild state of a pale purple or flesh-red or even white, but in the naturalized condition now described partaking in some measure of the rich and varied hues of the cultivated plant from which they originated. *Stamens* inserted at the very base of the corolla, their *filaments* nearly glabrous, geniculate at bottom, and villose at the flexure with pellucid stalked glands; *anthers* bright yellow, of 2 oblong, separate, diverging lobes. *Ovary* hairy, greenish, glabrous and tumid at base, but not seated on an annular gland. *Style* terete, pubescent, rather exceeding the shorter and posterior stamens, which embrace the ovary by their geniculate lower ends, a little thickened upwards to its obliquely truncate, yellowish and glandulose summit (*stigma*), which curves a little forward. *Capsules* pale brown, hard and stiff, ovato-conical, obtuse and a little curved at the apex, very gibbous at the base, glanduloso-pubescent, with a deep furrow on each side like the *Italic long f.*, opening by 3 valvate terminal splits or pores surrounding the persistent base of the style, the anterior cell dehiscing by 2 openings, the posterior by a single one. *Seeds* numerous, sooty black, very irregular in size and shape, truncate and angular like grains of coarse gunpowder, and sculptured all over with a rough prominent reticulation, forming angular cells.

Few plants present a more notable example of the triumph of Art over Nature in the production of varied and vivid colouring than this. In its truly wild state, as I have seen it on the stony hills near Montpellier and in the limestone quarries of Devonshire,* where it is scarcely less at home, its colours, as before remarked, are by no means striking or brilliant; whilst in cultivation it is one of the most stately and gorgeous flowers of the parterre, outvying the richest velvets in the softness and intensity of its crimson pile, relieved by the most glowing shades of orange and gold, at other times sporting in an endless combination of gaudy colours,—red, white, yellow and purple,—and striped, chequered, blotched or veined in as infinite diversity of patterns. Of the easiest culture, it graces alike the garden of the peasant and the peer, and, finding in this part of Europe a congenial climate, quickly establishes itself upon any wall or old building adjacent to its place of growth.

* At Catdown quarries, near Plymouth, it has perfectly established itself on the rock, and has there assumed the unostentatious tint of the primitive type, a pale flesh-red or almost white.

keeping its hold so pertinaciously, and multiplying so fast by seed, as fairly to earn a right to denizenship by this power of occupancy and antiquity of tenure.

2. *A. Orontium*, L. *Lesser Snapdragon* or *Calf's - snout*. "Leaves mostly alternate linear-lanceolate, spikes very few-flowered lax, segments of the calyx leaf-like longer than the corolla."—*Br. Fl.* p. 299. *E. B. t.* 1155.

In cultivated fields, amongst corn, turnips, &c., in garden-ground and dry waste places, on sandy, gravelly or chalky soils. *Fl.* July—November. ☉.

E. Med.—Fields between Lake and Sandown. Garden-ground at Shanklin and Newchurch. A few specimens in a cornfield near Bridge, by Godshill. Near Steepphill, *Albert Hambrough, Esq.*! Turnip-field at Nettlestone green. Field by the Wootton river, a little above Kite hill. Fields between Week farm and St. Lawrence, *Mr. W. D. Snooke*. Waste ground just out of Sandown entering on Royal heath, and in fields between Lake and Sandown. [A frequent weed in the garden of Thatched cottage, Bembridge, *Dr. Bell-Salter, Edrs.*]

W. Med.—Field by Sheepwash farm, Freshwater. Turnip-fields about Gurnet farm. By Cockleton, near W. Cowes. [Between Shorwell and Kingstone, *A. G. More, Esq., Edrs.*]

Root annual, whitish, tapering and rigid, branching, with a few flexuose fibres. *Stem* solitary (rarely more), from a span to a foot or 15 inches high, sometimes in rich soil 2 feet and upwards, erect or ascending, sometimes decumbent below, slightly flexuose, simple or more or less branched below the middle, but never so copiously as in *A. majus*, the branches opposite or alternate; terete, shining, roughish and somewhat viscid with short, spreading, glandulose hairs above, glabrous or nearly so below, or clothed with long, fine, simple, spreading pubescence. *Leaves* on the lower part of the stem mostly opposite, on the higher alternate, a little fleshy and hairy above and along their slightly deflexed or thickened margin, spreading, the floral ones often deflexed, lanceolate or elliptical-lanceolate, sublinear, the lowermost usually broader, obtuse and shortly stalked, the rest more or less pointed and minutely apiculate. *Flowers* axillary, on very short, stout, erect *peduncles*, remote, few, forming a lax leafy spike. *Calyx* foliaceous, its segments exactly resembling the leaves, the 3 superior sepals approximate, the central one largest; the two inferior remote from each other, all mostly ascending, at first about equalling the corolla, but soon becoming greatly enlarged, and exceeding both that and the capsule in length. *Corolla* about 6 to 9 lines in length, purplish pink or rose-coloured, sometimes white, in both cases streaked with darker veins on the throat and upper lip, the very prominent *palate* striped or reticulated with similar markings; *throat* very short, slightly hairy, compressed to a narrow ridge along its upper side, produced beneath posteriorly into a rounded keel-like gibbosity instead of a spur; *upper lip* nearly obcordate, deeply emarginate, the sinus acute, lobes flattish, ascending, somewhat reflexed, hairy at the back, slightly undulate-crenate; *lower lip* rather shorter than the upper, vaulted or inflated into the semiglobose palate closing the mouth completely, the gibbous summit often tinged with yellow, its inner and posterior surface, which is covered by the upper lip, whitish and villous with long curled hairs, inferior margin deflexed, trifid, the segments entire, the middle one small and narrow-oblong or ligulate, all equal in length. *Stamens* nearly equal; *filaments* purplish, flattened, glabrous or very nearly so; *anthers* cohering, glabrous; *pollen* bright yellow. *Style* whitish, terete and tapering, covered with glandular hairs, inserted obliquely on the very hispid *ovary*, its apex slightly decurved, subbilobate. *Capsule* hispid-pubescent, ovoid-conical, oblique at base and summit, faintly 2-lobed, the lateral furrow nearly straight, dehiscing as in the last by 3 gibbous pores surrounding the persistent style. *Seeds* numerous, brownish black or somewhat bronzed under a high magnifier, of a roughly rectangular figure, convex and scutiform at the back and finely punctate, with a narrow dorsal ridge and a thin projecting lateral margin all around; excavated on the opposite side into a deep cavity traversed by a hollow uneven septum at bottom, and having rugged, slightly inflexed, granulo-tubercular edges.

VI. LINARIA, Tourn. Toadflax.

† *Stems erect. Leaves linear-lanceolate, mostly scattered, sessile.*

§ *Inflorescence racemose or subspicate.*

"*Calyx* 5-partite. *Corolla* personate, spurred at the base; its mouth closed by a projecting palate. *Capsule* ventricose, 2-celled, opening by valves or teeth."—*Br. Fl.*

1. *L. vulgaris*, Moench. *Common Yellow Toadflax*. "Glabrous, leaves linear-lanceolate scattered crowded, flowers racemose imbricated, sepals ovate acute glabrous shorter than the capsule or spur, seeds tubercular-scabrous surrounded by a smooth wing, stems erect."—*Br. Fl.* p. 300. *Antirrhinum Linaria*, L.: *E. B.* t. 658.

β. *Corolla* milk-white, with the palate deep orange.

γ. Palate very pale yellow, almost white.

δ. *Corolla* with 5 or 6 spurs at the base. *Peloria*, *Curt. Fl. Lond.* *E. B.* t. 260.

Var. ? ε. Leaves broader; flowers larger, and as well as the pedicels smooth. *An L. speciosa*, Ten. ?

In hedges, borders of fields, waste ground and by roadsides; everywhere common. *Fl.* July—September. 24.

β. In a field-hedge between Werror farm and the high road from Newport to Cowes. Between Cockleton and Gurnet bay.

γ. About Royal heath, &c.; not uncommon in the island generally.

δ. A single specimen in the marshy meadows between Newchurch and Alverstone, facing a cottage called Burnt house, Oct. 1842. Some of the flowers with 5, others with 6 spurs. I found some plants between Morton house and Alverstone bearing a few flowers with cleft spurs; in one flower there were 2 spurs each so divided, but no multiplication of any other part of the corolla.

ε. Under the wooded shore a little W. of Ryde towards Binstead.

Root whitish, tapering, flexuose, simple or branched, often creeping, subligneous, *Stem* from about 1 to 2 feet in height, solitary or several, erect, sometimes decumbent or ascending at base, glaucous or purplish, glabrous or beset with a few short glandulose hairs, terete, obscurely furrowed, simple or branched above, sometimes copiously so, the branches erect or ascending, usually overtopped by the main stem and its spike of flowers. *Leaves* sessile, quite glabrous, scattered, crowded, from 1 to 2½ inches long and about 1 to 2 or 3 lines broad, deflexed or recurved on the inferior part of the stem, more distant and spreading above, with short leafy shoots in their axils; all linear or linear-lanceolate, acute, subglaucous or sometimes purplish, a little fleshy and oblique, their margins somewhat thickened and deflexed, 3-ribbed, the midrib very prominent beneath and marked above by a sharp groove or furrow, the lateral pair obscure and vanishing long before reaching the point of the leaf. *Flowers* numerous, crowded or imbricated in a constantly elongating spicate raceme terminating the stem and branches; on erect, glandulose-pilose, stout *pedicels*, about as long as the calyx, and springing from the axil of a lanceolate glabrous *bract*. *Calyx* glabrous, much shorter than the spur, its segments ovate-lanceolate or oblong-lanceolate, acute and entire, 3-ribbed, the 2 inferior ones a little remote, all equal in length, spreading at the points. *Corolla* from about 12 to 16 lines in length including the spur, finely ribbed or striate, sulphur-coloured, the lower lip citron-yellow, the very tumid bilobed palate of a rich orange, sometimes quite pale and concolorous, densely villous and bearded within, quite closing the throat; *upper lip* deeply bifid, porrected, the segments rounded, ascending, vaulted and reflexed; *lower lip* trifid, about as long as the upper, its segments roundish-obovate, the two lateral plane, somewhat

deflexed, the middle lobe much smaller, sometimes slightly emarginate; *spur* subulate, 6 or 7 lines in length, slightly curving backwards, often nearly straight, rounded at the point, terete, slightly keeled beneath. *Stamens* very unequal, their *filaments* stout, white, glabrous, except the longer pair, which are a little glandulose-pilose at base in front; *anthers* cream-coloured, distinct or slightly cohering in pairs. *Style* mostly about the length of the longer stamens, terete, a little enlarged below the greenish, oblique, glandulose *stigma*, quite glabrous, *Ovary* conoidal, glabrous, seated on a green tumid gland, which entirely surrounds it. *Capsules* pale straw-yellow, veined and glabrous, tipped with the style, much longer than the calyx, subglobose-elliptical, very obtuse, with a lateral furrow, dehiscing at the summit by several irregular teeth or valves. *Seeds* grayish black, orbicular, thin and flat, shagreened and partly muricato-tuberculate, edged with a broad flat membrane.

The var. β . is a very handsome one, from the shining milky or pearly whiteness of the corolla, and deep orange of the palate. The spur appears to be a little longer and more attenuated than in the ordinary state of the plant, but the brilliant white of the flowers cannot be prevented from changing to the usual yellow colour in the process of drying. Mr. Borrer tells me has remarked this var. I think in Sussex.

α . A very remarkable variety, if not a distinct species, though I can find no good character to separate it from *L. vulgaris*, except proportion of parts. *Leaves* much broader, narrowly lanceolate, the floral ones often quite lanceolate, more rigid and spreading than in *P. vulgaris* and very glaucous. *Flowers* nearly twice the size, approaching those of *L. dalmatica*, and like them of a citron- rather than sulphur-yellow, very handsome, forming a few-flowered, lax or distant raceme, not crowded and imbricate as in *L. vulgaris*, on longer less erect *pedicels*, the *spur* longer, straighter, more attenuate and very acute, directed perpendicularly downward. *Capsules* not much above half the size of those of *L. vulgaris*, mostly shorter than the calyx, sometimes as long or a very little longer. *Seeds* smaller, very similar to those of *L. vulgaris*, but the tubercles in the centre larger, more prominent and irregular.

Barton, in the 'Compendium Floræ Philadelphica,' ascribes a fœtid phosphorated odour to the flowers of this plant, and states that they are said to contain phosphorus, I suppose therefore in a free or uncombined state.

2. *L. repens*, Act. *Creeping-rooted Pale-blue Toadflax. Blueish Sweet Toadflax.* Glabrous, leaves linear whorled or scattered, flowers racemose, sepals lanceolate glabrous the length of the spur but shorter than the capsule, seeds angular transversely wrinkled, stems erect. *Br. Fl.* p. 300. *Antirrhinum*, L.: *E. B.* t. 1253. *Lin. striata*, DC.

β . *hybrida*. Flowers larger; spur longer, acute, somewhat curved; upper lip striated, lower lip whitish, plain (or obsoletely striate); palate orange. (See H. C. Watson in Hook. Lond. Journal of Bot. vol. i. *L. Bauhini* sed male). *L. italica*, Trev.? *Br. Fl.* 5th ed. *Bab. Man.* p. 218. *L. stricta*, Hornemann. *Reich. Icon.* cent. 5, p. 14, tab. 423? *L. stricta* β . *grandiflora*, Godron, *Fl. de Lorraine*, ii. p. 146.

In hedges, on banks and dry barren ground; rare. *Fl.* June—September. 24.

E. Med.—By the roadside about a quarter of a mile beyond Stapler's heath going from Newport to Ryde, sparingly. Between Quarr and Binstead? *Rev. Wm. Darwin Fox*, but who does not feel sure that this station is correct, nor have I ever seen it near Ryde myself.

W. Med.—In several places about W. Cowes, rather plentiful, as along the road to Newport on the left hand, some distance beyond the turnpike-gate, at intervals, where also the var. β . occurs, but in extremely small quantity. Hedges about Broadfield farm, in various places, pretty abundantly. On the field side of the right-hand hedge of a bye-road leading out of the Newport and Cowes road to the windmill. A few plants by the roadside between Bouldner and Luckets.

Debborn turnpike, *Miss G. Kilderbee*. Lane between Thorley-street and Bouldner, and I believe elsewhere in that parish, *Mrs. Penfold !!!* Near Yarmouth, *Rev. W. T. Bree* in litt. Hedges near W. Cowes, in abundance, *Mr. W. D. Snooke !!!*

Root or rather rhizoma long, whitish, flexuose, woody, creeping considerably, and often much branched under ground in a very singular manner. *Stem* 1 or more, sometimes very numerous, erect or ascending and even procumbent below, from a foot or under to 2 or even 3 feet in height, quite glabrous, rounded and usually purplish at base, pale green and subangular above, fistulose, in the larger plants mostly simple below, variously and often copiously branched towards the top mostly in a subcorymbose manner, very leafy, branches slender, straight, wiry, and much more sparingly beset with leaves than the stem, so as to present rather a naked aspect compared with the latter. *Leaves* very numerous and crowded at the base of the stem, subverticillate and mostly disappearing early, those higher up scattered or alternate, attenuated, more or less erect, the lower ones spreading or diverging, larger and broader than the rest (2 inches or more in length), all very narrowly elongate-lanceolate, attenuated at both ends, extremely acute, of a pale mostly very glaucous green, quite glabrous, slightly fleshy, with a single prominent midrib beneath, and bearing each a short sterile or abortive branch in its axil; on the flowering branches the leaves are extremely narrow, much fewer and more distant, irregularly scattered. *Peduncles* shorter than the flowers, stout, purplish, erect, spreading or a little decurved, each subtended by a linear upright bract similarly coloured, as long as or rather longer than itself, or sometimes shorter. *Flowers* in racemose clusters of no great length, terminating the stem and branches, giving in the aggregate the appearance of a panicle or corymb. *Calyx* purplish, somewhat fleshy, much shorter than the corolla; *sepals* oblong or elliptic-lanceolate, acute, equal, erect, not spreading, obsoletely single-nerved, the midrib coloured at the back, sprinkled, chiefly on the inner surface, with white pedicellate glands, their margins minutely cartilaginous and suberrate. *Corolla* small, but varying a good deal in size, about 4 or 5 lines in length exclusive of the spur, white suffused with purplish blue or lilac, beautifully striped with deeper lines of the same colour but of variable intensity, usually most conspicuous in the lobes of the upper lip in front, sometimes faintly marked or even obsolete, and either straight or forming a network of anastomosing veins; *mouth* closed by the incumbent, deeply striated upper lip and very prominent whitish *palate*, which has a spot, sometimes faint or obsolete, of golden yellow in the centre, the ridge villous with white or purplish subclavate bristles, enclosing a double line of fulvous ones running backwards to the spur; *lower lip* trifid, its segments equal, very obtuse and rounded, reticulated with purple veins; *upper lip* incumbent, its segments erect, ascending, very much rounded, diverging and vaulted at apex, the tips mostly a little incurved; *spur* flattened horizontally, straight, very variable in length but always shorter than the corolla, sometimes extremely short, almost triangular, rounded and even subtruncate at the end, at other times more tapering and almost acute, traversed like the limb of the corolla with dark blue simple lines. *Stamens* beset at their base with stiff pellucid bristles: *filaments* purplish. *Style* cylindrical, glabrous, slightly enlarged upwards into the subglobular, papiloso-glandulose, yellowish or greenish *stigma*, which is somewhat curved forward. *Capsules* very small, 2—2½ lines long, globose, splitting deeply and irregularly. *Seeds* several, dull black and angular, deeply excavato-rugose.

β. This curious form, which I find occasionally on hedgebanks about W. Cowes, where *L. repens* abounds, is unquestionably a hybrid between that species and *L. vulgaris*, and not distinct in itself, being seen only where the two parents are growing together, always very sparingly, and, though very different in aspect from either taken apart, presenting no character that is not found in one or the other progenitor. In general habit this mule *Linaria* is mostly allied to *L. repens*, of which it possesses the scattered leaves and panicked inflorescence, together with the striated upper lip, but the flowers are much larger, and both the spur and lower lip are decidedly those of *L. vulgaris*; the first, as in that plant, being lengthened out, slightly curved and acute, not as in *L. repens* extremely short and

obtuse; the lower lip, as in *L. vulgaris*, is pale yellow or whitish, without purple striæ, or at best but a few faint traces of such towards the spur; palate with a broad orange disk; in *L. repens* there is little more than a speck of that colour in the centre, almost concealed by the incumbent upper limb of the corolla. Again, though the inflorescence is decidedly the paniculate one of *L. repens*, the flowers on the extreme branches evince a tendency towards a spicate form, and the leaves are somewhat less dispersed or closer set, as we find them in *L. vulgaris*. Capsules are formed on this hybrid plant, but I have not yet ascertained whether the ripe seed will reproduce the mule variety, an experiment I intend trying, if possible. In reply to a communication in which I expressed my conviction of this being a hybrid, Mr. H. C. Watson says, "Your hybrid *Linaria* is in all likelihood the same as my *L. Bauhini*, and if hybrid we should expect some differences, as in fact do exist in the Cornish, Hants, Cork and Swiss specimens." It ought surely to excite suspicion that this *Linaria* has been hitherto remarked only in stations known to produce the rarer of the two parents, viz. *L. repens*, at Shirley, Penrhyn, Cowes and Cork.

The fact of the flowers possessing a sweet odour, affirmed of this species by the old botanists, though I could never perceive it, was accidentally remarked to me by Mr. Butler, of the Bugle Inn, Yarmouth.

§§ Flowers solitary, axillary.

3. *L. minor*, Desf. *Least Toadflax*. "Leaves linear-lanceolate obtuse mostly alternate glandular pubescent, flowers solitary axillary, pedicels three times as long as the calyx which is longer than the spur, segments of the upper lip of the corolla diverging, seeds oblong furrowed, stem erect much branched." — *Br. Fl.* p. 301. *E. B.* t. 2014.

In dry gravelly or sandy cornfields and other tillage-lands, in waste and garden-ground, chalk-pits, on old walls and rubbish here and there, often abundantly. *Fl.* June—October. *Fr.* July. &c ☉.

E. Med.—On the Dover occasionally. Very plentifully in a field between Whitefield wood and Barnsley farm. Near Adgestone. Rather abundantly on the steep banks of débris of the chalk-marl in Whitecliff bay. Most abundantly in the third field below Gatehouse farm, along which the pathway to Newchurch goes, also in a field adjoining, and occupying the space between Inwards and Long Phillis copses, a little due S. of Beanacre farm. In a field near Ryde, by the road to Ashe and Newchurch. Wheat-field between Prestwood and Smallbrook farm, in some plenty. Field near Nunwell. Very abundantly in the garden of Red Cross, at Salterns, *Dr. Bell-Salter*. Quarry at Ventnor, *Dr. Martin*. Shide chalk-pit, in plenty, *Mr. Snooke !!!*

W. Med.—In a high field or sloping bank at the West end of White Pit (chalk-pit), Newport, 1845. About W. Cowes, near Pallance, &c., not unfrequent. Near Thorness bay, Ningwood and Rowledge. Cornfields between Wellow and Shalcombe farm. Near Westover. By Calbourne New Barn. Fields near Tapnel, *Mr. Snooke*.

Herb clothed all over with spreading, simple, glandular pubescence, which is a little viscid, readily retaining particles of dust conveyed by the wind. *Root* annual, whitish, slender, tapering and flexuose, not much branched, often nearly simple. *Stem* erect or often reclining at base, oblique or ascending, round, solid, wavy, often in part purplish, in small specimens nearly simple, in the larger more or less copiously branched from the base and bushy, the lowermost branches mostly opposite, the higher alternate, simple or slightly compound, more or less erect or ascending, usually overtopped by the main stem. *Leaves* scattered or alternate, a few of the lowermost chiefly opposite, rather distant, not much above an inch long at most, dull grayish green, often purplish, especially underneath, somewhat fleshy, with a strong depressed midrib, very narrowly lanceolate or elliptic-lanceolate, more or less obtuse, attenuated downwards rather than petio-

late, mostly deflexed or recurved; a few of the lower stem-leaves occasionally varying to obovate-oblong or spatulate. *Peduncles* axillary, solitary, single-flowered, when in fruit much (twice or thrice) longer than the calyx, erecto-patent or diverging. *Bracts* none. *Flowers* small and inconspicuous, remote, forming a sort of loose spike. *Calyx* somewhat enlarged after flowering, its segments leaf-like, linear-spatulate, subacute, single-ribbed, the 3 superior ones nearly equal, ascending, with erect or recurved tips; the 2 inferior rather shorter than the rest, very wide asunder, the tips spreading. *Corolla* not much exceeding the calyx, scarcely 3 lines in length, glandulose hairy except the spur, pale purple or violet; *upper lip* flat, bifid, with a wide, shallow, acute notch between its rounded perfectly horizontal lobes, its posterior margin produced laterally into 2 corners or angles, giving the entire lip a square figure; *lower lip* yellowish white, longer than the upper, deeply cleft anteriorly into 3 oblong, very obtuse and entire segments separated by obtuse sinuses; *palate* downy, yellowish or white, sometimes faintly spotted with purple, narrow, and hence scarcely closing the mouth, behind which are two large spots of brownish purple; *spur* very short and blunt, but variable in length, usually not half that of the corolla, subcylindrical or subconical, slightly curved, purplish and glabrous, deflexed; *throat* villous within, the hairs tawny. *Stamens* not cohering; *filaments* white, slightly bearded at the base only with a few glandulose hairs; *anthers* black; *pollen* white. *Style* subcylindrical, straight, purplish and glabrous above, white and slightly glandulose-pilose below, the apex a little dilated; *stigma* a glandulose viscid disk, formed by the obliquely truncate point of the style. *Ovary* ovoid, very hispidoglandulose, oblique, with a tumid green annular gland at its base. *Capsules* rather shorter than the sepals, hairy, whitish, rugose, ovoid-oblong, very oblique at the base, gibbous in front, opening at the very obtuse summit by 2 large nearly semicircular apertures, mostly split at the margin into several unequal valvate segments. *Seeds* very numerous, deep brown, ovoid-oblong, rounded at both ends, neither compressed nor margined, traversed longitudinally by their prominent undulate and somewhat crenate ridges, that anastomose occasionally.

†† *Stems* filiform, trailing or prostrate. *Leaves* broad-stalked. *Flowers* solitary, axillary, on long peduncles.

* 4. *L. Cymbalaria*, Mill. *Ivy-leaved Toadflax*. Vect. *Roving Jenny*. *Roving Sailor*. "Leaves cordate 5-lobed palmate-nerved alternate glabrous, stems trailing."—*Br. Fl.* p. 300. *E. B.* vii. t. 502. *Benth. in DC. Prod.* x. p. 266. *Curt. Fl. Lond.* i. fasc. 1.

Pretty frequent on walls, ruins, stone fences and hedgebanks near houses; completely naturalized. *Fl.* April—November. 24.

E. Med.—On the old walls of Quarr abbey, but very sparingly. Old walls about Knighton manor, abundantly. On a low wall at Binstead parsonage. Abundant on the stone walls at Ventnor. Stone fences at St. Lawrence, and about Sir Willoughby Gordon's, by Old park, plentifully. It has established itself on a stony declivity at Bank-end, just beyond the farm, from which it is no doubt an escape, though the situation be an apparently natural one.

W. Med.—On walls at Shorwell.

Entire plant perfectly smooth and glabrous. *Root* slender, whitish and fibrous. *Stems* numerous, slender, terete, very brittle and succulent, with a tough central chord, pale green or purplish, alternately branched, the branches prostrate, and clinging by occasional rooting fibres to the surface of old walls, which the plant often covers, in the manner of Ivy, with a dense tapestry of entangled herbage; various in length, from a span or under to 2 or 3 feet when pendulous. *Leaves* distant, alternate or partly opposite, various in size, deep rich green above,

Linaria purpurea, an Italian species, is partially naturalized on walls and about gardens at Bonchurch, being a plant very common in cultivation here.

whitish and often tinged with purple beneath, somewhat fleshy and shining, obscurely and palmately 5-ribbed, the lower and larger cordato-rotundate or sub-reniform, being mostly a little wider than long, 5- or obscurely 7-lobed, the lobes shallow, rounded, entire and obtuse, tipped with a minute point, the middle lobe broadest; upper and smaller leaves similar in form, but in general more deeply and acutely (sometimes but 3) lobed, much like those of Ivy in miniature. *Petioles* variable in length. *Peduncles* solitary, axillary, single-flowered, longer than the leaves and partly lengthened out in fruit. *Calyx* extremely small, about a line in length, purplish green, the segments elliptic-lanceolate, concave, pointed and fleshy. *Corolla* scarcely half an inch long including the spur, dilute purplish blue or violet; *upper lip* ascending, recurved, deeply bifid, the lobes oblong, rounded, entire or retuse, flat, with 2 or 3 purple streaks; *lower lip* paler, not striated, deeply 3-cleft, the lobes roundish oblong, entire, plane, spreading, the middle one rather the longest and narrowest; *palate* very prominent, deeply 2-lobed, closing the mouth, lobes with a yellow spot anteriorly, which is sometimes obsolete; *throat* darker violet striated with deep purple, clothed inside at bottom with a double broad line of fulvous hairs running backwards from each lobe of the palate almost to the base of the very short, conical, nearly straight and obtuse *spur*. *Stamens* 4, with a distinct rudimentary fifth filament and anther; *filaments* with a few hairs at the base only; *anthers* cream-coloured; *pollen* white. *Style* cylindrical, a little thickened upwards to its round, obtuse, faintly 2-lobed and somewhat recurved apex.

An idea seems generally to prevail that the present species of *Linaria* is of comparatively recent introduction into Britain from Italy, where it is said to be truly indigenous. It certainly has increased in frequency during the last half-century, which may be accounted for by the more diffused taste for gardening amongst all ranks, and the facility with which the species disseminates itself where it is once planted. The author of these remarks remembers to have often heard that a near relative of his own, who had a great love for botanical pursuits, received as a present worth accepting in those days a quantity of *Cymbalaria* from the late Sir Joseph Banks, who was in the habit of occasionally sending her whatever was curious or uncommon in the vegetable tribe.

Gerarde gives a good figure of the *Cymbalaria italica*, as he calls it, and states that it "grows wilde upon walls in Italie, but in gardens with us," and does not speak of it as rare in his time. Parkinson, a contemporary of Gerarde, mentions it as "growing naturally in divers places of our land, although formerly it hath not bene knowne to bee but in gardens and other places that are shade upon the ground."

This pretty species has doubtless obtained its Isle-of-Wight denomination from its creeping abroad and extending itself far and wide with such facility. It has acquired in America the name of Kenilworth Ivy, as I learn from my esteemed friend, Dr. Darlington, of West Chester.

5. *L. Elatine*, Desf. *Sharp-pointed Fluellen* or *Toadflax*. Stems procumbent hairy, leaves broadly hastate acute mostly alternate, the lowermost ovate opposite angulato-dentate, peduncles glabrous, spur of the corolla subulate nearly straight. *Sm. E. Fl.* iii. p. 132. *Br. Fl.* p. 300. *Antirrhinum*, *L.*: *E. B. t.* 692.

In waste and cultivated ground, gardens, tillage-fields, on hedge- and ditch-banks, sometimes in wet boggy places and woods; abundant almost everywhere. *Fl.* June—November. ☉.

Root whitish, slender and tapering, simple or branched at the bottom. *Stem* much branched from the very base, or the branches themselves may be considered as so many stems which are very slender, somewhat angular, solid, leafy, with several straight, simple, short, distant and alternate ramifications, that diverge from the main stem at nearly right angles, and are, like them, beset with copious long, white, pellucid and jointed hairs intermixed with similar but shorter gland-tipped ones: in an early stage of the plant the central stem is erect, but after-

wards droops at the summit, and finally becomes prostrate like the lateral ones, which spread in all directions, and together with the main stem elongate as the autumn advances often to 2 or 3 feet. *Leaves* numerous, on short hairy stalks, the earliest and lowermost pair or two mostly opposite, roundish ovate, angulato-dentate or repando-dentate, those above them broadly hastate or ovato-hastate, acute, with horizontally diverging acute auricles; gradually becoming smaller and mostly narrower, the extreme leaves and those on the lateral branches very small, and either similar in shape to the rest or ovate and rounded at the base; all hairy like the stem, of a grayer or more glaucous green, and somewhat less flexible than in the next species, with a far less soft and less copious pubescence, their veins few, distant and prominent beneath. *Pedicels* solitary, axillary, single-flowered, very slender, scarcely thicker than a thread, perfectly glabrous except near both extremities, which are slightly hairy; patent, and when in fruit diverging nearly at right angles from the stem, or even partly deflexed, in which they differ materially from the following species, the pedicels in which are seldom more than simply divaricate. *Flowers* smaller, paler and less conspicuous than in the next species, otherwise very similar. *Sepals* scarcely if at all enlarged after flowering, ovato-lanceolate, very acute, hairy on the sharp prominent keel and edges, which last are expanded at the base into membranous, reflexed, pellucid margins, which are wanting in *L. spuria*. *Corolla* hairy, a little longer than the calyx, the middle segment of the *lower lip* rather longer than the 2 lateral (in *L. spuria* the 3 segments are of equal length or nearly so, and the palate less prominent); the colour of the lower lip is more of an uniform yellow than in *L. spuria*, with a dash only of violet at its exterior basal edges; *upper lip* plane, less deeply bifid with broader segments than in *L. spuria*, deep violet, not purplish brown as in that; *spur* very slender, straight or scarcely at all incurved, nearly glabrous. *Stamens* fringed near the base with a few coarse hairs; a fifth abortive one on the centre of the upper lip behind the others; *anthers* cohering, dark purple, bluntly cordate, granulated, their lobes bearded with a tuft of stiff hairs. *Style* glanduloso-pilose in its lower half, glabrous and enlarged upwards; *stigma* oblique, on the enlarged summit of the style, ending in a flat pointed lobe; *germen* globose, covered with gland-tipped hairs and seated on a tumid base. *Capsules* small, whitish and pubescent, mostly a little shorter than the scarcely enlarged calyx, subglobose, slightly compressed laterally and flattened at the summit, rather faintly 2-lobed, opening by 2 oblique circular valves that nearly meet at its apex. *Seeds* about 12–20, dull brown, subrotundo-ovate, without a border, deeply sinuato-rugose or cellular.

This and the following plant, like our periwinkles, afford a beautiful example of two closely allied yet unquestionably distinct species. Nearly as they approach in character, and often as they are found growing intermixed, I have never observed any disposition to hybridize. Their geographical distribution is also very different: *L. spuria* is the more southern plant, neither ranging to Ireland in the West nor to Sweden in the North, in both which countries *L. Elatine* is found, though rarely. Neither of them has yet occurred in Scotland, and beyond the midland counties of England *L. spuria* is already scarce. The flowers of both are occasionally regular or peloriated (see *L. vulgaris*), in which condition I have found them in chalky fields at Twyford, near Winchester. The fifth additional or abortive stamen (*staminodium*), analogous to the scale in *Scrophularia*, &c., exists in both these species (and in *L. Cymbalaria*?) as a minute skinny appendage in a fold at the base of the upper lip, above and behind the four perfect stamens.

I find *L. Elatine* repeatedly in situations very remote from cultivation, in wet, spongy and boggy places on heaths, and on moist or dry ditchbanks, as also in woods, where *L. spuria* never occurs, that being to all appearance exclusively a plant of tillage-land, or at most of waste ground in the vicinity of the former.

6. *L. spuria*, Mill. *Round-leaved Fluellen* or *Toadflax*. Leaves ovate downy mostly alternate and entire, stem prostrate

downy, peduncles hairy, spur of the corolla subulate incurved. *Br. Fl.* p. 300. *Antirrhinum*, *L.* : *E. B.* t. 691.

In similar situations with the last, but of rather less frequent occurrence in general, being more, though not exclusively, attached to calcareous soils, and seldom straying beyond the limits of cultivation. *Fl.* June—November. ☉.

E. Med.—About Ryde in several places. On waste ground at Springfield. Field at Westbrook, between Ryde and Nettlestone. Very large and abundant in a field between Brading and Nunwell, also in stubble-fields about Carpenters, in plenty. Near Beaper farm, and fields in the angle of Whitefield wood due S. of it, abundant. E. end of Brading. Very common in cornfields along the Undercliff, at Ventnor, St. Lawrence, &c. About Haven-street. Above Sandown bay. Near Adgeton.

W. Med.—Abundant in very many places about Yarmouth, Thorley, Wellow, Ningwood, Shalcombe, &c. At Rowledge. Near Mottistoun, in a field along the edge of a copse called Bush Row, quite overgrown with it, 1840.

Root whitish and tapering. *Stem* much branched from the base, the branches lying flat on the ground, at the end of autumn often 3 or 4 feet in length, the central one at first erect or inclining, the lateral branches always procumbent, simple or again a little ramified, covered with fine, soft, spreading hairs. *Leaves* mostly alternate, a few of the lower ones only being opposite, shortly stalked, viscid, very broadly ovate or roundish, cordate at the base, quite entire, excepting a few distant toothed or angular serratures on a few of those nearest the root, upper ones distinctly pointed, all dull grayish, rather glaucous green, very soft and downy. *Flowers* solitary, larger than in the last species, on simple, axillary, hairy and less slender peduncles, that diverge from the stem in various degrees, but are seldom at right angles to it, or reflexed in seed, as is the case usually in *E. Elatine*. *Sepals* more or less enlarged after flowering, their margins reflexed but not membranous, equal, ovato-lanceolate, 3-ribbed at the base. *Corolla* hairy; *lower lip* rich yellow, in 3 rounded lobes, with a yellow *palate*, and a purplish stain on each side of its outer margin at the base; *upper lip* plane, 2-lobed, rich purplish brown, with which colour the throat is prettily speckled and streaked within; *spur* slender, much incurved and hairy. *Stamens* fringed on their lower half, with a fifth abortive one on the upper lip above and behind the four others; *anthers* cohering, dark purple, bearded; *pollen* white. *Style* oblique, hairy; *stigma* an oblique lobe, flat above, pointed anteriorly; *germen* globose, hairy, surrounded by a tumid ring or gland. *Capsules* in every respect like those of the last, but about twice the size, shorter than the now considerably enlarged calyx. *Seeds* as in *L. Elatine*, perhaps rather more finely and less deeply rugose and cellular, later and more sparingly ripened with us.

Beside the difference of shape in the leaves, *L. spuria* is well distinguished from *L. Elatine* by its stouter habit and larger flowers, whose stalks are shorter, thicker, and hairy like the stems, and diverge from the latter at a moderate angle only, whereas in *L. Elatine*, besides that the peduncles are smooth and much more slender than in *L. spuria*, they stand out from the stem nearly at right angles when in flower, and are for the most part finally reflexed as the seed-vessels approach maturity.

VII. MELAMPYRUM, *Linn.* Cow-wheat.

“*Calyx* tubular, 4-toothed. *Upper lip* of the *corolla* laterally compressed, turned back at the margin; *lower lip* trifid. *Ovary* with 2 superposed *ovules* in each cell. *Capsule* oblong, 2-celled, obliquely acuminate, opening on one side. *Cells* 1—2 seeded. *Seeds* oblong, even, gibbous at the base.”—*Br. Fl.*

1. *M. pratense*, *L.* Common Yellow Cow-wheat. “*Flowers* axillary secund, leaves in distant pairs, corolla 4 times as long as

the calyx closed, the lower lip straight."—*Br. Fl.* p. 296. *E. B.* t. 113.

β. Leaves ovate or ovato-lanceolate.

In dry woods and thickets; very common. *Fl.* May—July? ☉.

In St. John's wood, Quarr copse, and other places about Ryde, &c.

β. Plentifully in New copse, near Wootton bridge. A specimen found at Apse castle, 1843. Mr. Borrer finds it on the Wye with very broad ovate and cordate leaves, and I gathered it plentifully with leaves nearly as broad in Ross Island, Killarney, in 1842.

Root of several rigid, whitish, branched fibres. *Stem* erect, from about 8—12 inches high, obtusely quadrangular, alternately furrowed on the two opposite sides, greenish or purplish, often marked with dark spots or blotches, glabrous or slightly pubescent with short rigid hairs, copiously and for the most part brachiatly branched from the bottom, the branches axillary, long, lax, spreading or ascending, readily broken off at their swollen junction with the stem, mostly opposite, here and there alternate, or sometimes two together one below the other, waved or flexuose. *Leaves* opposite, entire, distant, very shortly stalked or sessile, dark green, somewhat firm and leathery, roughish above and minutely scabrous on their somewhat inflexed margins, finely reticulated and paler beneath, very variable in breadth, from linear-lanceolate to ovato-lanceolate or even ovate, subcordate at the base, acuminate, the apex somewhat obtuse, mostly recurved. *Floral bracts* similar in form and colour to the leaves, but smaller and more acute, with from about 1—3 basal pairs of long, straight or incurved teeth; the lowermost pair of bracts usually entire or nearly so; all furnished with a few depressed glands, which, as in the next species, are found but very sparingly sprinkled over the surface, chiefly at their lower extremities. *Flowers* solitary and axillary, second and approximating in pairs, forming a short leafy spike or raceme terminating the stem and branches, on extremely short thick peduncles, patent or ascending. *Calyx* tubuloso-campanulate, a little compressed, tinged with purple, its segments nearly equal, ascending, lanceolato-acuminate, ciliato-scabrous, the upper pair decussate, with a rounded sinus between them, the lower curved upwards, the sinus between them more acute. *Corolla* 6 or 8 lines in length, or above thrice that of the calyx, straight, the tube extremely short, greenish, the throat usually pale yellow or ochraceous, often nearly white, minutely downy, lips yellow verging upon orange, at other times rose-coloured, closed or nearly so, the upper one greenish at the sides, its short, turned-up, purplish border emarginate; shaggy inside, the beard whitish; *lower lip* equal in length to the *upper* (in all my specimens now before me the upper lip is by no means the protruding one, as stated by Mr. Babington) or slightly exceeding the latter, purplish, the apex of its inflexed margin minutely 3-cleft, downy but not bearded within; the *palate* yellow, vaulted and traversed by a deep furrow, and hence 2-lobed, with a purplish spot at the posterior part of each lobe, of a curved figure. *Anthers* cohering in one mass by their anterior faces, bearded with white hairs at their lower end. *Germen* small, ovate, much flattened, obliquely pointed, with a tumid, finely punctate, striated gland in front, which is produced anteriorly into a short obtuse process, of a cylindrical shape, that is sometimes erected, at other times doubled down upon the basal lobe; *style* included, deciduous, white, nearly glabrous, incurved and gradually dilated below its subcapitate glanduloso-pilose apex. *Capsules* pale green, nearly $\frac{1}{2}$ an inch in length, ovoid, much compressed and sub-acuminate, a little oblique at the base and very acute apex, at length blackish and rugosely reticulated. *Seeds* 2—4, wax- or horn-coloured, ovate or elliptical-oblong, truncate at the end and attached to the white spongy caruncle.

†? 2. *M. arvense*, L. *Purple Cow-wheat*. Vect. *Poverty-weed*. Leaves linear-lanceolate, the uppermost toothed at the base, spikes oblong lax 4-sided, bracts ovato-lanceolate pectinato-pinatifid with awl-shaped segments dotted at the back with a few

depressed glands, calyx with very long setaceous points, corolla rather longer than the calyx, the lips closed. *Br. Fl.* p. 296. *E. B. t.* 53. *Curt. Br. Entom.* vi. t. 273.

In cornfields and on dry banks adjacent to them on the chalk at the back of the island; most abundantly. *Fl.* June—August. ☉.

E. Med.—A splendid but pernicious plant, originally, there is no doubt, introduced with seed-wheat; now but too common in some parts of the S. of the island, where it proves a grievous nuisance, and apparently becoming more widely dispersed every year. First noticed on the Deane and Ash farms, near St. Lawrence, where the wheat and barley are completely overrun by it, and the crops greatly deteriorated thereby. Common about Whitwell. Cornfields at the W. end of Ventnor, plentifully in 1838. In fields, upon banks and bushy slopes above Lord Yarborough's marine villa at St. Lawrence, and I have traced it as far as Bonchurch, but where it occurs more sparingly as yet. It behoves the farmers of W. Medina to be on their guard against its introduction into their chalky soils. A specimen with white flowers was found by Miss Hadfield near Ventnor!

A bushy herb, conspicuous from the rich purple-coloured bracts of its flower-spikes. *Root* annual, whitish, tapering, flexuose, branched and rigid, said to be parasitic. *Stem* erect, from 10—18 inches high, rather obtusely quadrangular above, nearly round just above the root, its central cavity filled with loose cellular tissue; much branched, sometimes from the very base, the branches opposite or subalternate, erect or spreading, often like the stem partly purplish and rough with copious short, curved, deflexed pubescence. *Leaves* pale dull green, subsessile, mostly opposite, a few here and there somewhat alternate, linear-lanceolate, their edges slightly deflexed, a little obtuse at the apex, obscurely veined above, reticulated beneath, the midrib often purplish; harsh with short, scattered, bristly hairs, the lower leaves mostly quite entire, those at or near the bottom of the flower-spikes with one or more basal pair of linear-lanceolate or subulate entire teeth, mostly pointing forwards, incurved and very acute. *Flowers* sessile, in ovate or oblong, 4-sided, obtuse, lax spikes, terminating the stem and branches, and lengthening out to 4 or 5 inches as the summer advances, each flower subtended by an erect ovate bract, which is at first of a fine purple rose-colour, afterwards as the seed forms changing to green like the leaves, pectinato-pinnatifid, with long, subulate, spreading, acute teeth; 5-nerved and tapering at the base, the lower bracts with longer points, their margins and those of the teeth finely spinuloso-ciliate; sprinkled at the back with several round, depressed, dark brown and shining dots or glands, that are placed irregularly or as it were by chance, and imbedded in the substance of the bract; the use of these glands is unknown, though they are always present. *Calyx* tubuloso-campanulate, very loosely investing the corolla, angular and downy, greenish or purplish, about $\frac{3}{4}$ ths or $\frac{1}{2}$ rds the length of the corolla, its segments triangular, the two lower ones smallest, all with very long, waved, setaceous, spinuloso-ciliated points, into which are continued the 4 stout hairy calyx-ribs. *Corolla* exceeding the calyx in length, finely downy, the tube long, slender, rose-coloured, bent nearly in the middle; throat bright yellow verging on orange, hairy within; lips closed, dark rose-red, thickly sprinkled with pellucid very minute globules; the upper lip bordered with a purple beard, and shaggy inside with long white hairs; lower lip beardless, trifid at the apex, the edges much incurved, with a stout blunt keel on its concave under side. *Stamens* cohering; filaments yellow, with a few glandular points, the lower pair enlarged in the middle; anthers linear-oblong, purplish, with green backs, bearded at the base and apex, coadnate by their flat anterior faces; pollen of roundish, white, pellucid, angular grains. *Style* white, very long and filiform, slightly hairy in its upper half, the summit deflexed, slightly thickened at its apex into a simple glandular stigma; germen obliquely conical, glabrous, with a large, green, tumid and slightly lobed gland in front at its base. *Capsule* greenish, membranous, obovato-rotundate, compressed, with a minute, oblique, recurved point, strongly reticulated, glabrous, and sprinkled with a few warty protuberances. *Seeds* much like grains of wheat in size and colour, always partly abor-

tive, 1, 2, or 3 (mostly 2) in each capsule; about 3 lines in length, pale brownish yellow, ovato-oblong, terete, very smooth and shining, their lower end formed into a large, white, nearly hemispherical, faintly striated appendage, tipped with the dark prominent *hilum*; their taste hot, bitter and disagreeable.

When the seeds of this plant begin to germinate, the radicle, elongating, elevates the yet entire seed considerably above the surface of the soil, after which the testa bursts by the expansion of the plumula, and the young plant thus appears as it were to vegetate in the air.

From Mr. Borrer I learn that this gaudy pest of the farmer is reported to have been introduced from Jersey, which is very improbable, seeing that it is not mentioned as a native of that island in Babington's 'Primitiæ Floræ Sarnicæ,' nor have I remarked it there myself. From Mr. George Kirkpatrick, of Newport, I understand it is rumoured to have been conveyed hither from Norfolk, whilst according to others it was imported from Spain. As the species abounds in a few of the middle and eastern parts of England, and especially in Norfolk, I am most inclined to believe we are indebted to that county for the unwelcome present; nor am I acquainted with any other stations for *M. arvense* S. and W. of London, except in this island. The name of Poverty-weed, inapplicable as it may appear to so showy a plant, bears reference, I presume, to an opinion that it exhausts or impoverishes the soil, or indirectly perhaps alluding to a similar effect upon the pocket of the farmer, the produce of whose fields is rendered less marketable, from the blue colour imparted to the wheat-flour, contaminated by an admixture with the seeds, from which it is scarcely possible to free the grain by winnowing, as the specific gravity of both is pretty much alike. Withering remarked, that though the seeds of *M. arvense* give a bitterness and discoloration to the bread, they do not make it unwholesome, but the contrary opinion prevails amongst the country people here, who attribute decidedly injurious effects to bread so adulterated, and which a poor woman described to me as "tasting sharp in the mouth."

A respectable shoemaker, named Rabbett, who resided for many years at Whitwell, and has only recently left it, told me that when he was employed in harvest on Week farm they used to pull up the Purple Cow-wheat or Poverty-weed with the greatest care, and carry it off the field to burn it, picking up the very seeds from the ground wherever they could be perceived lying. Of late years, he thinks, the bread from the wheat on the Deane and Week farms is not so dark-coloured and "hot" as it used to be, and that the plant is less plentiful than formerly. He remarked that it often makes its appearance in clover-fields and grass, and appears plentiful when the land is left in lay, at which time it might be eradicated without injury to any crop. He gives the same account of its introduction into the island with seed-wheat as others do, but does not know from whence this "droll" weed is supposed to have come to us, which was before his recollection.

I understand from Captain Love, R.N., who had the information from Mr. Jolliffe, of the Deane farm, which is much infested with this plant, that sheep are partial to the *Melampyrum arvense*; and, as the seeds are not matured in any quantity till the crop is off the ground, by thus eating it off after harvest the land might perhaps in a great measure be freed from this pernicious annual, if weeding out in spring be thought too troublesome or expensive.

VIII. PEDICULARIS, Linn. Louse-wort.

"*Calyx* inflated, 5-cleft, or unequally 2—3 lobed, jagged, somewhat leafy. Upper *lip* of the *corolla* laterally compressed, arched; lower one plane, 3-lobed. *Ovary* with many ovules. *Capsule* oblique, acute, compressed, 2-celled. *Seeds* angular."—Br. Fl.

Natives for the most part of elevated and alpine regions; our two are perhaps the only European species which descend into the plains, or that even prefer a low situation.

1. *P. palustris*, L. *Marsh Lousewort. Tall Redrattle.* "Stem solitary branched upwards erect, calyx broadly ovate hairy ribbed with crenated nearly equal lobes."—*Br. Fl.* p. 297. *E. B.* t. 399.

In low boggy places, wet meadows, pastures and thickets, in ditches, pools and field-drains, in many parts of the island, but not very general. *Fl.* May—September. ☉ or ♀?

E. Med.—Rookley moor, in the deep bogs about the Wilderness, &c. In Sandown level. Apse heath, where I have found it with white flowers.

W. Med.—Abundant in the boggy meadows at Freshwater Gate. On Schoolhouse farm, and by Sheepwash farm, Freshwater. By the stream between Carisbrooke and Plash farm, near the latter. In wet swampy meadows above Newbridge, and in the wet thicket by the stream between that place and Calbourne mill, 1844. Moory ground between West Court and Sandy Way, 1846. Withy-bed at West mill, between Newport and Carisbrooke, *Mr. C. D. Snooke* in litt., 1842.

A bushy plant, with a pyramidal mode of growth, and, like *P. sylvatica*, with leaves resembling some fern. *Root* whitish, tapering, often considerably branched, filamentous at the crown, by some thought to be annual, by others (as *Wahlenberg*) pronounced perennial. Subtending the bases of the radical leaves and mixed with the filaments, may be found a few ovate, concave, pointed scales, as remarked by *Mr. Babington*, perhaps abortive branches or leaves. *Stem* solitary, erect, from under a foot to a yard in height, in small plants often simple, in larger specimens copiously and alternately or oppositely branched from the base, subteretely angular, greenish at bottom, purplish and furrowed above, very leafy, solid, glabrous (or a little downy, *Sm.*) *Leaves* scattered, alternate or subopposite, oblong-lanceolate, the inferior ones on short, semiterete, flattish petioles, pale green or more commonly purplish, deeply pinnatisect or pinnatifid, the segments nearly opposite, oblong, blunt, crenately incised or sinuate, subpinnatifid, fleshy, their thickened margins strongly deflexed, covered beneath with raised cellular spots, their midribs with a few scattered hairs occasionally. *Flowers* in short leafy clusters terminating the stem and branches, solitary in the axil of each pair of leaf-like bracts, on very short pedicels or nearly sessile. *Calyx* at first oblong, subcylindrical, then ovate and ventricose, hispid, many and prominently ribbed, often dotted and stained with purple, laterally 2-lobed at the mouth, the lobes shallow, their margins dull purple, crenately and unequally lobed, the lobes rounded, minute, spreading and recurved. *Corolla* about twice as long as the calyx, glabrous, the tube whitish, subcylindrical, with many transparent ribs; *upper lip* small, dark purple, much compressed, veined and striate, with a pair of minute subulate teeth just below its oblique apex, and a similar blunter pair a little lower down of a dark purple colour; *lower lip* very large, of a fine rose-red, minutely ciliate, cordato-orbicular, trifid, the central lobe smaller, circular, partly concealed by the 2 lateral rather shorter ones, that are veined with purple towards the throat, spreading and vaulted. *Stamens* nearly equal, 2 of the filaments a little downy below their summit and at the base, the 2 upper a little hairy at the base only; *anthers* yellow, not bearded nor cohering in pairs. *Style* included, filiform, glabrous; *stigma* greenish, simple; *germen* obliquely conical, glabrous, seated on a green glandular base which is very tumid and projecting in front. *Capsule* brownish, its oblique mucronate apex projecting a little beyond the calyx, quite glabrous, veined. *Seeds* ovato-oblong, dull reddish brown, rugoso-reticulate, with a longitudinal chink on one side like those of coffee.

The upper lip I find occasionally (at Easton and elsewhere) abbreviated into a lanceolate process, leaving the stamens quite exposed.

2. *P. sylvatica*, L. *Pasture Lousewort. Dwarf Redrattle.* "Stem branched from the base and spreading, calyx oblong angular glabrous in 5 unequal crenate and almost leafy segments."—*Br. Fl.* p. 297. *E. B.* t. 400. *Steven. Monog. Pedicul.* p. 45, No. 35, t. 1, fig. 1.

β. Flowers white.

In boggy, wet or damp pastures, on moist heaths and commons, in marshy thickets and spongy turfey meadows; much more frequent and general than the last. *Fl.* April—July. ☉ or ♀.

E. Med.—Meadows near Alverstou mill. Plentiful all over Munsley hill, and in wet meadows below Bridge. On Bleak-down. On Rookley moors, about the Wilderness, Rookley farm, and common in moory pastures along the valley of the Medina generally. Between Ninham and Quarr. About Ninham, near Ryde; and on Wootton common.

W. Med.—Abundantly in wet meadows about Woolverton, by Shorwell. In the large pasture-fields by the Yar, between Freshwater mill and Beckett's copse.

β. Between Shanklin and Sandown, under the cliffs. About Bridge, Rookley, &c., not uncommon.

Root large, white and spongy, with a tough woody centre, more or less forked, chiefly below, into several long, tapering, nearly simple branches, and having at the crown a whorl of ovate or oblong leaves, with crenate deflexed margins, and often subtended by a few brown filamentary scales. *Stems* mostly numerous, leafy, simple or slightly branched at the very base, subtereti-angular; the primary one erect, from about 2 to 4 inches high, the lateral for the most part barren and spreading, ascending or prostrate around the central one in a circular more or less cæspitose tuft, nearly glabrous, with a few scattered hairs chiefly on their upper part. *Leaves* very small, about 1 to 1½ inch in length and ¼th of an inch wide, linear-oblong, not tapering to the apex as in *P. palustris*, glabrous, dull olive-green, often, like the stem and calyx, tinged with purple, glabrous, those of the stem opposite or alternate, faintly decurrent, pinnatifid, the segments roundish or ovate, deeply incised-serrate or lobed, with thickened deflexed margins, areolated beneath as in *P. palustris*. *Flowers* crowded into a terminal, obtuse, leafy spike, axillary, solitary, erect, on short, triangular, glabrous peduncles, that are loosely surrounded by a prolongation of the outer calycine membrane, which encloses them like a sack, and tapers down to the base of the pedicel, where it unites with the latter. *Bracts* resembling the leaves, but broader at the base and often tripartite. *Calyx* ½ an inch in length, membranous, ovato-oblong, inflated, especially after flowering, often tinged purplish, venosely reticulated with 5 or 6 plait-like ribs or angles, usually glabrous except about the margins and inner side of the segments, which are clothed with beautiful crystalline hairs, sometimes a little downy, the mouth in 5 unequal irregular lobes, of which the superior one is smallest, narrow and often undivided, the 4 lateral lobes with short reflexed summits, which are mostly 3-cleft or crenate, and resemble the ultimate divisions of the leaves themselves. *Corolla* quite glabrous, bright rose-red, sometimes flesh-coloured or white, twice as long as the calyx; *upper lip* narrow, sub-falcate, ascending, strongly compressed, rugosely striate, sharply keeled at top, and having a shallow notch below its very rounded and obtuse apex, produced backwards into a triangular tooth on each side; *lower lip* nearly semicircular or fan-shaped, deeply divided into 3 pretty equal rotundato-obovate lobes, which are flat, entire or slightly emarginate and crenulate, often deflected, sometimes ciliated, uniting behind at 2 crimson-stained prominences running back into the throat, with a deep channel between them; *tube* much shorter than the calyx, cylindrical, white, membranous, hardly at all bent, or forming an angle with the white, tubular, scarcely dilated *throat*, which is much exserted and hairy within behind the *palate*. *Stamens* included, nearly equal; *filaments* white, slender, slightly hairy at bottom, the inferior pair bearded for some distance below the anthers with white pellucid hairs; *anthers* yellow, slightly cohering in pairs, obovate, their lobes acute below but not awned, bursting along the centre of their flat inner faces; *pollen* yellow. *Style* very long, weak and slender, a little exserted, glabrous, purplish, slightly enlarged upwards, hooked or bent downwards at some distance from the yellowish, capitate, globose *stigma*, which appears beautifully striate with rows of short glandulose points; *germen* glabrous, seated on and surrounded anteriorly by a green, tumid, somewhat, pointed gland. *Capsule* from 3 to 6 lines in length, about as long as the now ventricose calyx, pale brown,

reticulately veined and glabrous, broadly and obliquely ovate and pointed, its anterior margin nearly straight, gibbous below, attenuated to a thin edge at top, sublobate by a deep external furrow. *Seeds* numerous, pale yellowish brown, elliptic-oblong, very obtuse, terete, quite smooth and glabrous, but coated with a fine reticulated pellicle.

IX. RHINANTHUS, *Linn.* Yellow-rattle.

"*Calyx* inflated, 4-toothed. Upper *lip* of the *corolla* compressed laterally, entire, furnished on both sides below the apex with a straight tooth-like appendage or lobe; lower one plane, 3-lobed. *Ovary* with many *ovules*. *Capsule* of 2 cells, obtuse, compressed. *Seeds* imbricated, flat and usually margined." —*Br. Fl.*

1. *R. Crista-galli*, *L.* *Common Yellow-rattle.* *Vect. Fiddle-cases.* "Leaves oblong-lanceolate serrated, flowers in lax spikes, calyx glabrous, appendages of the upper lip of the corolla short roundish, bracteas ovate." — *Br. Fl.* p. 294. *E. B.* t. 657. *R. glaber*, *Lam.* *R. minor*, *Ehrh.*

In mostly damp but often dry meadows and pastures; larger and more branched on boggy ground, wet spongy heaths and commons: very frequent. *Fl.* May—July. ☉.

Root whitish, of several wiry branched fibres. *Stem* erect, rigid, quadrangular, the angles slightly winged* from the somewhat decurrent leaves, simple or more usually branched, in the larger plants often copiously so, the branches opposite, erect or ascending, forming a bushy herb a foot or two in height, and together with the stem thickly spotted longitudinally with purplish brown in short lines or streaks, more sparingly so or not at all in their lower part. *Leaves* opposite, quite sessile, dull, sometimes pale, olive-green, firm, a little rigid, smooth and shining, oblong-lanceolate or sublinear, often strongly recurved and deflexed, almost clasping, subincisedly serrate, the serratures rather distant, pointing forwards, obtuse, the sinuses acute, and receiving the deeply depressed, nearly straight and simple veins of the leaf, which at first sight appears for this reason pinnatifid; the margins of the leaves are slightly spinuloso-ciliate, thickened underneath, and the intercostal areas sprinkled with numerous grayish sinuate spots, which with the intermediate green portion give a reticulated appearance to the whole under side of the leaf. *Flowers* in rather crowded terminal spikes, arranged in pairs or opposite, sometimes pointing one way or secund, more usually alternating in their direction or decussate, the lower ones very shortly stalked, the upper almost sessile, each with a solitary *bract* beneath it, of which the lowermost pair or two are scarcely different from the upper leaves and much larger than the calyx, those above them gradually becoming shorter, paler, broadly ovate, acuminate, more deeply and acutely incised-serrate, the highest of all scarcely longer than the calyx and roundish in their outline. *Calyx* membranous, pale yellowish green, roundish ovate, ventricose, much compressed laterally, quite glabrous excepting along its thin, narrow, vertical border, which is more or less downy, much enlarged and inflated after flowering, inconspicuously 10-ribbed, with transverse reticulations, two of the ribs on each side nearly marginal, one central from the base to the acute sinus of the two ovate, nearly equal, minutely ciliated and submucronate teeth or segments, the remaining pair running straight to the point of these latter, and parallel with the central rib and at no great distance from it; sometimes there is another pair between the marginal and three centre ribs. *Corolla* a little exserted, ringent, about half an inch in length or rather more, bright yellow, the tube wide, straight, many-ribbed, colourless and membranaceous; upper

* Two of the faces, or those directly beneath each pair of leaves, are slightly rounded or convex.

lip vaulted or helmet-shaped, compressed, downy chiefly along the back, faintly ribbed, its anterior margin in 2 short, bluish, lobe-like appendages rounded in front; *lower lip* 3-lobed, about as long as the upper, the lobes nearly equal, roundish, the 2 lateral lobes waved, entire, vertical and parallel to each other, the middle lobe folded. *Stamens* short, included; *filaments* broad, membranous, twisted below, yellowish and glabrous; *anthers* 2-celled, densely bearded along the sutures with white hairs. *Nectary* a small, green, fleshy, incurved scale or gland at the base of the anterior acute margin of the ovato-rotundate germen, obtuse and deciduous. *Style* long, filiform, a little hairy, incurved, deep violet just beneath the thick, greenish, capitate stigma. *Capsule* enclosed in the much longer and now husky, brownish, inflated and conspicuously ribbed calyx, almost exactly orbicular, nearly plane, strongly veined, mucronate with the persistent base of the style, quite glabrous, whitish brown, bursting throughout its thin lateral margins. *Seeds* several in each cell, rather large, pale brown, somewhat resembling the human ear in shape, flat, orbicular-reniform, minutely punctato-rugose, with a broad, membranous, finely striated border, which is a little cupped or concave.

X. EUPHRASIA,* Linn. Eyebright.

"*Calyx* tubular or bell-shaped, 4-fid or 4-toothed. *Corolla* tubular, 2-lipped. *Capsule* obtuse or emarginate, cells many-seeded. *Seeds* rather angular, longitudinally ribbed; hilum sub-apical."—*Bab. Man.*

1. *E. officinalis*, L. *Common Eyebright*. "Leaves ovate deeply toothed, corolla glabrous, lobes of the lower lip emarginate."—*Br. Fl.* p. 294. *E. B. t.* 1416.

In moist as well as in dry pastures and heathy places; abundantly. *Fl.* May—September. ☉.

Herb extremely variable in luxuriance, from 2 or 3 inches in dry barren pastures to nearly a foot in moist shady woods. *Root* tapering, flexuose, with a few terminal fibres. *Stem* either nearly simple or copiously and oppositely branched from the base, erect or reclining, obsoletely quadrangular, purplish and shining, downy with fine decurved pubescence, the branches erect, decussate, the lowermost ascending and often wavy or flexuose. *Leaves* small, mostly opposite, a few of those towards the summit alternate or subalternate, quite sessile, ovate, of a deep shining olive-green above, paler beneath, glabrous or slightly hairy, plicate with depressed nervation, deeply and sharply inciso-serrate, with 5 or 6 very acute teeth on each side of the central and terminal one, each tipped with a fine bristle-like point except on the lowermost leaves. *Flowers* axillary, solitary, nearly sessile, very beautiful on a close inspection. *Calyx* tubular, 2-lobed, the lobes lateral, bidentate, the teeth equal, lanceolate, acute, single-ribbed, the rib running back to the base of the calyx, and as well as the margins of the latter often spinulose and purplish. *Corolla* villous externally, the tube cylindrical, slender, as long as the calyx; *upper lip* concave, white or pale purplish streaked internally with dark purple, its margin erect, slightly bifid or 2-lobed, the lobes emarginate; *lower lip* white, in 3 plane, nearly equal, deeply emarginate segments, of which the anterior one is rather the longest, with 3 faint purplish streaks, and a spot of bright yellow at its origin and between the two lateral lobes, which are each marked at the base with three diverging bright purple lines. *Stamens* smooth; *anthers* reddish brown, cohering, bearded along the commissures of the cells, which are awned at their lower extremities, the awns of the inner lobes of the upper and

* "Name from Euphrosyne, expressive of joy and pleasure, in allusion to its properties," *Hook.*, but I imagine more directly derived from *eu*, bene, and *φραζω*, dico, a plant of good report, to be well spoken of, and commended for its virtues.

back pair much longer than all the rest and very slender. *Style* long, white, incurved, its superior half sprinkled with stiff suberect hairs; *stigma* white, pedate, glanduloso-pilose. *Germen* (ovarium) hairy on the top. *Capsule* brownish, a little shorter than the calyx, oblong, vertically compressed, attenuated to a thin edge, and hispid at the summit, which is obtuse or a little emarginate, and tipped with the base of the style. *Seeds* several in each cell, oblong, pointed at both ends, covered with a loose skin, longitudinally ribbed with fine transverse striæ.

2. *E. Odontites*, L. *Red Eyebright*. "Leaves linear-lanceolate remotely serrated, upper ones (or bracteas) alternate, flowers in unilateral racemes, anthers nearly glabrous, stem branched erect scabrous pubescent."—*Br. Fl.* p. 294. *E. B.* t. 1415.

β. With white flowers.

Abundant everywhere, whether moist or dry, in pastures, woods, waste places, borders of fields, by waysides, amongst corn, &c. *Fl.* June—August. ☉.

β. Near Ryde, *W. Wilson Saunders, Esq.* Near Cowes? *Captain Beckford, R.N.*

Root parasitic, according to Decaisne.

Bartsia viscosa, or what is supposed by Dillenius, in Ray's Syn. (ed. 3tia Ind. Plant. Dub.) to be that plant, is obscurely mentioned as growing in the Isle of Wight, on the authority of Mr. Cole, under the name of *Cratægogonum cubitalis, altitudinis, flore luteo*. It is not unfrequent so near this island as Poole in Dorsetshire, and is still less so in the Channel Islands. It may therefore well be expected to occur here.

Order LVI. OROBANCHACEÆ, Vent.

"*Calyx* variously divided, persistent. *Corolla* irregular, persistent, with an imbricated æstivation. *Stamens* 4, didynamous. *Anthers* 2-celled, the cells distinct, parallel, often mucronate. *Ovary* in a fleshy disk, 1-celled, with 2—4 parietal many-seeded receptacles. *Style* 1. *Stigma* 2-lobed. *Capsule* 2-valved. *Seeds* very minute. *Embryo* at the apex of a fleshy *albumen*.—Herbaceous, dingy-coloured, somewhat succulent, leafless plants, glandular and scaly, generally parasitical on the roots of other plants."—*Br. Fl.*

I. OROBANCHE, Linn.

"*Calyx* of 2 lateral, often combined and bifid segments, bracteated. *Corolla* ringent, 4—5 cleft. A *gland* is at the base of the *germen* beneath.—*Leafless, brown or purplish, herbaceous, scaly plants, often attached to the roots of other plants.*"—*Br. Fl.*

* *Bracts* solitary under each flower.

1. *O. rapum*, Thuill. *Greater Broom-rape*. Stem simple, corolla tubular campanulate nearly straight, its upper lip undivided, lower lip in 3 nearly equal segments of which the 2 lateral ones are subacute the central one larger and more obtuse, *stamens* glabrous, style downy, *germen* surrounded at the base by a

tumid glandular ring. *O. Rapum Genistæ, Thuill. Fl. Par.* 2nd ed. p. 317? *O. major, L.: Reich. Icon. Bot.* viii. fig. 900? *Br. Fl.* p. 284. *E. B.* vi. t. 421. *Sutton in Linn. Trans.* iv. p. 175. *Leighton, Fl. Shrop.*

On heaths, commons, and bushy pastures where furze and broom abound, on the roots of which it is parasitic; rare. *Fl.* June, July. 24.

E. Med.—On Briddlesford heath and parts adjacent, on the roots of furze, not unfrequent; noticed by *Mr. Borrer* in an excursion I made with him in 1840. A specimen or two on a bank by the roadside not far from Lynn farm, 1843. On the roots of broom and furze between Ninham and Quarr abbey, 1845. Very abundantly in the last station in 1846.

The largest of our Isle-of-Wight species. *Root* of a few fibres partly attached to the plant, from which it derives a portion of its nourishment. *Stem* usually solitary, sometimes 2 or even more, very stout, often as thick as the finger, 12—18 inches or 2 feet high, erect, solid or sometimes fistulose, bluntly angular, furrowed, downy all over with white, gland-tipped, pellucid hairs, pale or usually purplish brown, very tumid at the base, where it is sheathed with close-set, erect, smooth, purplish or yellowish and fleshy scales, of a broadly ovate shape, becoming narrower, thinner, hairy and more distant as they ascend, the uppermost linear-lanceolate, spreading or recurved, and in all respects like the floral bracts. *Flowers* numerous, erect, sessile, placed alternately in a gradually elongating, cylindrical, rather dense spike, soon withering to a dull rusty brown; those near the summit before expansion of a pale purplish yellow, each with a single, lanceolate, taper-pointed, finally recurved bract, about equal to or rather longer than the flower it subtends. *Calyx* variable in length, in 2 broad, concave, villous lobes, each lobe cleft into 2 lanceolato-acuminate single-ribbed segments. *Corolla* about 9 or 10 lines long, very hairy, bell-shaped, the tube short, wide and nearly straight, ventricose or a little inflated; upper lip large, galeate, arched, irregularly waved, plaited or notched, but not lobed or divided, the sides spreading or a little reflexed; lower lip in 3 pretty equal, subacute, undulate, plicate segments, of which the central one is usually rather larger and longer (often considerably so) than the others and more obtuse, sometimes indeed, as are the lateral segments, occasionally rounded or at least cordate, the edges of all and of the upper lip minutely erose and crenulate. *Stamens* inserted on the tube quite at the bottom, implexed in pairs at their summit, their filaments curved, flattened and dilated downwards, plane or channelled on their inner side, quite smooth for $\frac{2}{3}$ of their length, their upper third glanduloso-pilose, though very sparingly so; anthers of 2 distinct, oblong, awned lobes, each lobe appearing 2-celled, having a longitudinal septum running throughout; pollen white. *Style* included or exerted, cylindrical, incurved, hairy its entire length, suddenly dilated into the two yellow, very distinct, globose, diverging lobes of the stigma. *Germen* oblong, hairy, with a bright yellow lobed and tumid gland encircling its base, especially in front, which secretes a honied fluid in great quantity. *Capsules* oblongo-elliptical. *Seeds* numerous, minute and unequal in size, of a roundish not at all elongated figure, shining and nearly jet-black, covered with a prominent network of large angular cells, very beautiful under a microscope.

The flowers are not only much larger but more erect than in our other species, more enlarged, widened or bell-shaped upwards, and more ringent.

2. *O. minor, Sm. Lesser Broom-rape. Vect. Shepherd's Pouches.* Stem simple, corolla subcylindrical, lower lip in 3 equal crisped and plaited obtuse lobes, stamens hairy on the inner side of their lower dilated part, style smooth or nearly so, germen quite glabrous. *Br. Fl.* p. 286. *E. B.* t. 422.

β. Flowers pure white or nearly so.

γ. Herb pale yellow or amber-coloured.

Very common throughout the island, attached to the roots of various plants, but by far the most frequently on clover,* the crops of which it often completely overruns. *Fl.* June—October. ☉.

E. Med.—In a field adjoining Sandown barracks, in great profusion, 1841. About Lee farm, Shanklin. Clover-fields near Godshill church overrun with it, 1837. In every clover-field about Arretton, Perretton, Redway, &c., in the greatest profusion, 1839. At Binstead, in a field by the Rev. Aug. Hewitt's. At Blackbridge. Field at Southford, by Whitwell; and near Deane farm. On *Plantago Coronopus* on the cliffs above Sandown bay, *J. A. Hankey, Esq.*, 1843 !!! On *Apargia autumnalis* on a bank close to Morton farm.

W. Med.—Clover-field by the hotel at Freshwater Gate completely overrun with it, 1841.

β. In a field near Garretts, in plenty, 1846. In many of the specimens here gathered the flowers were milk-white, more commonly however tinged with the ordinary purplish colour.

γ. Clover-field by Lee farm, near Shanklin.

A very variable plant in size and colour, often not more than 4 or 5 inches, at other times more than a foot and a half in height, usually of a dingy purplish brown or bluish colour, occasionally whitish or pale amber, downy all over with jointed pellucid hairs, which are tipped with yellow glands. The scaly tuberous caudex is attached by short filaments to the roots of the clover, from which it derives probably a part of its nourishment only, the earth supplying the remainder. *Stem* simple, solitary (or several emitted laterally from the base of the caudex), roundish, obtusely angular, downy, with several scattered lanceolate scales like those beneath the flowers, filled internally with a white pith. *Flowers* sessile, or in the larger full-grown plants a few of the lowermost are not uncommonly on compressed footstalks, often of considerable length, leaving the calyx at the base of the peduncle; each with a brown, linear, deflexed scale or bractea at its base, of about its own length, and either entire or with a slight tooth near its origin. *Sepals* ovate, concave, with about 6 faintly marked nerves, cloven about half-way down into 2 subulate fringed segments. *Corolla* $\frac{3}{4}$ ths of an inch long, a little curved, more cylindrical than funnel-shaped, tinged with violet in its upper part, downy, with several strong purple ribs; *upper lip* roundish, but appearing arched from its two halves folding a little together at the central rather shallow notch, waved and crenate, veined with purple; *lower lip* in 3 nearly equal obtuse lobes, curled or rather crisped and plaited irregularly like the upper, notched and veined in the same manner: I have never seen the middle lobe so lengthened out as the fig. in *E. Bot.* represents it, which in other respects is rather an indifferent plate. *Stamens* thickly clothed with white hairs on the inner side of the lower dilated portion of the filaments, quite glabrous on their upper contracted part and all along their outer side. *Style* quite smooth except a few scattered hairs near the summit; *stigma* of 2 very distinct, diverging, purplish lobes. *Ovary* perfectly glabrous, with a small, bright yellow, glandular, scarcely enlarged spot at the base in front, but not encircling it with a tumid ring as in *O. major*. *Capsule* oblong or elliptical, rusty brown, tipped with a part of the style. *Seeds* extremely minute, scarcely more than half as large as those of *O. major*, brownish and scarcely shining, ovato-oblong, attenuated at one end, covered with a network of far less regular and more elongated cells.

I understand from Mr. Loe, jun., of Newchurch, that pigs eat this plant with avidity, and that a person in that village is in the habit of feeding those animals with it. It is probably highly nutritious, being extremely succulent, and possessing a sweetish, succeeded by a slightly bitter, flavour.

I have found this species at the foot of the Pelham woods with the flowers densely crowded into interrupted spirals along the stem, and in one specimen the

* Mr. G. E. Smith has found this species on *Angelica Archangelica* (*O. Picridis*, *Schultz*) in a garden, as well as on *Pelargonium* in pots, of which I have seen examples.

flowers formed several complete whorls near the top, of 7 or 8 flowers in each whorl.

3. *O. Hederae*, Duby. *Ivy Broom-rape*. "Stem simple, sepals 1-nerved ovate below suddenly contracted into 1—2 subulate points nearly as long as or longer than the tube of the corolla, corolla tubular curved, limb denticulate wavy, upper lip 2-lobed its sides straight, lower of 3 roundish nearly equal lobes, middle lobe rather the longest, stamens inserted above the base of the corolla glabrous with a few scattered hairs on the lower half, style glabrous downy or with a few hairs on the upper part, lobes of the stigma (yellow) cohering to near the middle."—*Br. Fl.* p. 286. *O. barbata*, Pair. *E. B. Suppl. Bab. Prim. Fl. Sarn.* p. 66.

At the roots of Ivy, in moist shady woods, on damp rocks, walls and banks, chiefly at the back of the island, but probably only a variety of the last species. *Fl.* July—October. ☉?

E. Med.—At East-end. Common at Bonchurch, and on banks at Ventnor. Abundant about Steephill, in Pelham woods, and in general throughout the Undercliff.

Stem 1 or frequently 2, 3, or more from the same swollen base, beneath which are a few short, stout, yellow fibres, attaching the plant to some creeping filament of the root of Ivy at a few points only, the rest striking into the earth in the usual way; erect, from a few inches to nearly 2 feet in height, simple, and mostly slenderer than in *O. minor*, bluntly angular, purple and very downy with gland-tipped hairs. *Scales* most numerous about the base of the stem, pale, fleshy, ovate and imbricated, those higher up lanceolate, scattered, withering to a dark brown colour. *Flowers* in an elongating spike, usually more distant and less numerous than in *O. minor*, occasionally very few and remote, sessile, alternate, pale cream-coloured, afterwards purplish, finally brown, the corolla strongly veined with purple. *Bracts* solitary, ovato-lanceolate, purple, with slender often deflexed points as long as or longer than the corolla. *Sepals* ovate, fringed, each terminating above in one or two long subulate points, the lower, when two are present, shorter than its fellow, and continued downwards into a less prominent nerve; where there is but one point the rudiment of a second usually exists as a more or less distinct tooth or angle, which is rarely quite obsolete; the upper or longer point of the sepal is about equal to the tube, and is continued to the base of the calyx as a strong rib or nerve keeled anteriorly. *Corolla* cylindrical or tubular, scarcely at all enlarged or dilated upwards, arched or curved, very hairy, and having mostly 6 strong purplish ribs with a few obscurer intermediate ones; of these ribs the three most conspicuous occupy the under side of the tube, one running up into the centre of each division of the trifid lower lip; *upper lip* of the corolla slightly 2-lobed, the lobes deflexed, crisped, notched or toothed on the margin; *under lip* in 3 very distinct segments, of which the centre one is the largest and longest, fan wedge-shaped, the 2 lateral more or less lobed, rounded, all variously plaited, cut or notched on their edges. *Stamens* in all the very numerous specimens before me inserted much higher on the tube than described by Mr. Babington, quite as much so indeed above the base as in the equally numerous examples of *O. minor* also before me for comparison (the point of insertion of these organs is perhaps variable, as in some Primulacæ and Boraginacæ); *filaments* compressed, dilated at the base as in *O. minor*, but far less hairy beneath at the inner side than in that; * *anthers* with very prominent awns. *Style* incurved at the apex, minutely downy in the upper part or very nearly quite glabrous; *stigma* 2-lobed,

* Posterior filaments, according to Lloyd ('Flore de la Loire Inférieure,') widely separated at the base; in *O. minor* the posterior filaments are approximate and parallel, as the same author remarks l. s. c. pp. 191, 192.

the lobes approximate, almost coalescing, yellowish (in *O. minor* the lobes are very distinct and remote on the bifid almost forked apex of the style, and are of a purplish colour). *Germen* purplish. *Seeds* perhaps slightly larger and less oblong than in *O. minor*, a difference which may belong rather to the individuals than to the species.

Notwithstanding the detailed description I have here given, I freely confess myself unable to derive any character from the plant before me of sufficient prominence to mark it as a good species apart from *O. minor*, excepting the differently formed and coloured stigma, but which taken alone is too insignificant a character to place much reliance upon. The slender habit and purple colour of *O. barbata* may well be supposed the effect of a more shaded situation and humid soil, such as in fact it is constantly found to affect.

That the various species of *Orobanche* may grow equally on plants belonging to different and even widely separated natural orders, it is reasonable to infer from analogy with other and still more completely parasitic vegetables, *Cuscuta* for example, of which one species (*C. Epithymum*) flourishes on Furze, Heath and Thyme in equal luxuriance, though there is no botanical relation between any of these plants. So we find another Isle-of-Wight Dodder (*C. europæa*) attaching itself within the compass of a few yards to the wild Hop, Nettle and Thistles (*Cnicus arvensis*), the two former nearly allied genera, the latter very remote in the circle of affinities. See Sir W. Hooker's judicious remarks on this species in Br. Fl. 5th ed. p. 233.

4. *O. Picridis*, F. W. Schultz. *Picris Broom-race*. Stem simple, sepals 1-nerved entire or in part 2—3 nerved gradually attenuated into as many subulate points longer than the tube of the corolla, corolla tubular ventricose at the base curved at the apex nearly straight at the back, leaves denticulate wavy, upper nearly undivided its sides straight, lower of 3 roundish rather unequal lobes middle one the largest, stamens inserted below the middle of the tube hairy on the lower leaf within, style glandular-hairy below in front and on its upper half, lobes of the stigma (purple) nearly distinct. *E. B. Suppl.* iii. t. 2956 (optima). *Bertol. Fl. Ital.* vi. p. 439. *Godron, Fl. de Lorr.* ii. p. 181.

Rosehall Green, Freshwater cliffs, on *Picris hieracioides*, 1849.

Stem from a few (6 or 8) to 18 inches or 2 feet in height, pale purplish, whitish or yellowish, tereti-angular, simple, often somewhat flexuose, slender or occasionally of considerable thickness, very downy, particularly in its upper part and axis of the spike, with spreading, pellucid, gland-tipped hairs. *Flowers*, as in *O.*

O. elatior.—Amongst my early notes I find the following entry:—"Orobanche elatior? I found a clover-field at the end of Dark lane, near Carisbrooke, quite overrun with it, Aug. 6th, 1837." Unfortunately, and at this distance of time unaccountably, I neglected examining the species further, which leaves it doubtful whether the plants after all might not have been merely tall individuals of *O. minor*; but that species was then quite familiar to me, and is noted as gathered abundantly at Godshill the day previous.

Since writing the above, and on examining a bundle of plants collected in the island about the date of the above note, I found a single specimen of *Orobanche* having the characters of *O. elatior*, namely, the stamens glabrous above, but glandular-hairy in their lower and dilated part; yet without any label attached recording the date, or place where collected. I have little doubt however of the specimen having been gathered in the above locality, and after being dried laid aside and forgotten. It is certainly not *O. minor*, and it possesses neither the character nor aspect of *O. major*.

minor, in a dense spike sometimes of a foot in length, very numerous, in all my specimens from the above locality of a very pale colour, when quite fresh of a cream-colour or nearly milk-white* with more or less suffusion of dilute bluish purple, and pale purple or bluish veins, in the topmost unopened part of the spike, showing in the aggregate of a sulphur-yellow. *Bracts* solitary beneath each flower, lanceolate, taper-pointed, many-ribbed, glabrous above, hairy beneath, and fringed with brown, tapering, mostly recurved points about as long as or rather longer than the flowers (in *O. minor* considerably shorter than the flower?). *Calyx* about as long as the corolla, whitish, hairy without, glabrous within; *sepals* ovate, sometimes entire and undivided, or with a tooth or two at the sides and single-nerved; often one or both sepals bifid, with several (usually very indistinct) nerves; in either case each sepal is gradually attenuated into a long, tapering, brownish, very slender point, and is quite distinct or separate from its fellow to the very base, not soldered or united for any part of their length. *Corolla* about $\frac{3}{4}$ ths of an inch in length, tubular, laterally compressed so as to form an obtuse angled triangle in section, of which the back is the apex slightly arched or curved at both ends, certainly less so than in the fresh specimens of *O. minor* before me, as Mr. Babington observes, and the flowers appear to be decidedly and considerably larger; glanduloso-pubescent all over externally, within glabrous, yellowish white or cream-colour, or often nearly milk-white, mostly with a faint suffusion of dilute purplish blue, more conspicuous along the ribs on the anterior part of the tube, the limb 2-lipped, the lips minutely eroso-denticulate, wavy, crisped and plaited; *upper lip* porrected, nearly semicircular, entire, but folded anteriorly in the centre so as to give the appearance of being 2-lobed, with a notch or sinus between the lobes, and which does often really exist, as it appears to myself; *lower lip* in 3 roundish spreading lobes, of which the middle one is somewhat elongated and occasionally exceeding the 2 lateral, that are short and nearly orbicular, all 3 strongly crisped, wavy and erose, deeply plaited in the middle at their base, the central lobe especially, which terminates behind in two palatal protuberances, as in the personate genera of Scrophulariaceæ, &c. *Stamens* adnate with the tube of the corolla for some considerable part of its length, very villous in front in the united portion, and from thence to some distance upwards on the free part; their superior half and the whole of their exterior side glabrous, certainly not in the British plant scabrous above, as represented by Koch and Godron; *anthers* dilute purple in the bud, afterwards fuscous, the lobes strongly apiculate. *Ovary* oblong, conical, slightly hairy at its summit in front, with a bright yellow, tumid and glandulose spot anteriorly at base. *Style* about as long as the ovary, stout, cylindrical, purplish, hairy mostly in front along its whole length into the top of the ovary, and all around towards the much decurved summit (quite glabrous according to Bertolon†), which is deeply cleft into 2 diverging, globose, scabrous lobes (*stigma*), of a brownish red or sometimes violet-colour.

** *Bracts* 3 under each flower.

5. *O. cærulea*, Vills. *Purple Broom-rape*. "Stem simple, calyx with 5 lanceolate acute teeth shorter than the tube of the corolla, corolla tubular curved in front, middle of the tube compressed, upper lip of the corolla cloven, lobes of the lip acute with reflexed margins, anthers glabrous, style glandular downy."—*Br. Fl.* p. 287. *E. B. t.* 423. *Sutton in Trans. of Linn. Soc.* iv. p. 182.

* The flowers of *O. minor* are occasionally white, as well as in this supposed species.

† "Stylus quoque glaberrimus," *Fl. Ital.* vi. p. 439.

Parasitic on common yarrow in sandy pastures and heathy ground in East Medina; rare. *Fl.* June—August. 24.

E. Med.—In a pasture-field adjoining the rectory at Yaverland, sparingly, 1843. Near the cliff opposite the barracks on Royal heath, *J. E. Winterbottom, Esq.*, 1841! In a sandy field just beyond Royal heath, on the footway to Shanklin, *Miss Phillips*, 1845!! At Bordwood, *Dr. Bell-Salter*, 1845. This specimen is the largest I have yet seen, being upwards of 16 inches high, with 3 or 4 stout branches from the bottom of the stem. On the grassy edge of the cliff at the N. end of Sandown bay, *J. A. Hankey, Esq.*, 1843!! A specimen found between Lake and Shanklin, *Dr. Bell-Salter*, 1843.

Root a few short flexuose fibres. *Stem* 1 or more, from 3 or 4 to 12 or 15 inches high, erect, slender, simple, or, as in one or two of my specimens (from injury?) branched* at the base, rounded and obscurely angular, finely downy all over with erect pedicellate glands, of a dull bluish purple verging upon leaden gray, partly intermixed with rusty red, the lower subterranean portion or caudex whitish brown, and less swollen at the base than in most other species, often elongated and flexuose, of uniform thickness or most commonly enlarged at the summit and abruptly contracted immediately beneath, forming a sort of scaly bulb or tuberos crown at the origin of the emerged coloured portion of the stem, which is beset throughout with distant acute scales, which on its upper part are erect, narrow, dark brown or blackish. *Bracts* 3 below each flower, the central and outer one ovato-lanceolate, acute or taper-pointed, the two lateral and inner inserted rather higher and on the calyx itself, linear-lanceolate, all clothed with glands like the stem, and about equalling the calyx or a little shorter. *Flowers* in a short obtuse spike at the top of the stem, not very numerous even in the larger specimens, sessile or according to Koch (*Deutschl. Fl.* iv. Band. s. 466) somewhat stalked, which they certainly are not in my specimens. *Calyx* much shorter than (scarcely above half the length of) the corolla, tubuloso-campanulate, cleft about half way into 4 (rarely 5, *Sutton*) triangular-lanceolate, taper-pointed (3- or 5-nerved?) erect segments, with often a rudimentary fifth one at the back, the 2 *anterior sepals* broader than the 2 *posterior*, which are separated behind by a wide space and a deep emargination, all glandulose and coloured like the stem and bracts, the rest of the calyx pale yellowish or brownish. *Corolla* extremely glanduloso-pilose, about $\frac{1}{4}$ ths of an inch in length, of a dilute purplish amethyst-blue or violet (in my specimens deeper, and more inclined to the latter colour than the figure in *E. B.*), strongly marked with (about 16) deep violet ribs, funnel-shaped, considerably curved, a little compressed laterally, with a rather acute dorsal ridge, beneath flattened with 2 deep furrows, forming thus a somewhat triangular circumference, the *tube* short, whitish and ventricose, the *throat* much dilated, about equally 2-lipped; *upper lip* bifid, ascending, with short, divaricate, 3-ribbed, reflexed segments, that are more or less obtuse and rounded or sometimes a little acute, slightly notched and waved; *lower lip* broader, in 3 deep, deflexed and somewhat recurved subacute segments, that are entire, 3-ribbed, the 2 lateral ones ovate, shorter than the middle lobe, which is usually rather narrower and more oblong; all, like those of the upper lip, clothed with white simple (not glanduliferous) hairs or bristles, extending backwards over the palate and upper part of the throat of the corolla, which is otherwise quite glabrous inside. *Stamens* nearly equal, inserted just beneath the white tubular part of the corolla, and therefore very near its base: *filaments* white, quite glabrous excepting a few hair-like glands on their yellowish enlarged bases; *anthers*

* *Sutton* says that perfect specimens are occasionally branched, and I have a very fine one in that state quite uninjured; the branches however arise from the top of the underground portion of the stem as they would from a root-crown, though in another example, apparently somewhat mutilated, a few of the branches spring from the higher part of the stem. [In the list of stations given above, the branching of a very large specimen is described somewhat differently.—*Edrs.*]

yellowish, in my specimens quite glabrous (sometimes a little hairy, *Koch* and *Bab.*), the cells mucronate at the base. *Style* slightly incurved, compressed laterally, white or bluish, glanduloso-pilose its entire length, deciduous; *stigma* waxy white, deeply 2-lobed, the lobes divaricate, subglobose or sometimes flattened, minutely glandulose. *Germen* ovato-oblong, waxy white, shining and glabrous except at the summit, 2- or faintly 4-lobed, without any tumid ring or gland at the base. *Capsules* brown, ovate or elliptical-oblong, mostly with 4 deep furrows (hence 4-lobed), the 2 lateral furrows sometimes obsolete; a little shining, sometimes downy, opening at the apex chiefly in the line of the anterior suture. *Seeds* numerous, very slightly pellucid, blackish, the size of those of *O. major*, to which they are precisely similar, except in being somewhat pointed for the most part at one end.

In one of my specimens I find the terminal flower reduced to a simple, angular, straight and coloured tube, terminating in a flat, fleshy, 5-lobed limb, of a yellowish colour and resembling a stigma.

Sutton's description of this species in the 'Linnæan Transactions' is excellent, as is that by *Koch* in the 'Deutschlands Flora.'

I do not see how this plant can be the *O. cærulea* of *Villars*, in which that author expressly tells us the bracts are solitary, unless perhaps he overlooked the two lateral and inner ones, which are very narrow and much smaller than the middle and outer one.

II. LATHRÆA, Linn. Toothwort.

"*Calyx* campanulate, equally 4-cleft. *Corolla* tubular, 2-lipped: the upper lip concave, entire; lower 3-cleft. A depressed gland is at the base of the *germen*.—Plants leafless, coloured."—*Br. Fl.*

The genus *Lathræa* closely borders on *Orobanche*, and an American genus of this order, *Conopholis* (*Orobanche*) *americana*, has greatly the habit and aspect of *Lathræa*, having, like it, large and pale seeds, not very minute and black ones.

1. *L. Squamaria*, L. Greater Toothwort. "Stem simple, flowers pendulous in 1-sided racemes, lower lip of the corolla 3-cleft."—*Br. Fl.* p. 288. *E. B.* t. 50.

In damp shady places, woods, groves and shrubberies, amongst dead leaves and vegetable mould about the roots of the trees; rather rare. *Fl.* April, May. 24.

E. Med.—Scattered, though rather sparingly, in Bloodstone copse, near Ashy, at the roots of hazle, 1846. Very abundant in the adjoining Eagle-head copse, revealed by the clearing of the wood, 1846.

W. Med.—A single specimen gathered in Tolt copse, Gatcombe, 1845. In the Great and High Woods at Swainston, also in another wood near the house of *Miss Jane Simeon*. In Long copse (the wood beyond the Calamintha station), Apes Down, *Miss Dennett* (v. icon. color. præstantiss.) I have since heard from *Mrs. Dennett* that it was in very great abundance in Long copse, from whence I saw a fresh specimen, 1848!! Abundantly under the shrubs about the terraces at North Court, Shorwell, *Rev. James Penfold*!! Little Standen wood; not uncommon in the island: *G. Kirkpatrick, Esq.* A single specimen in the wood between Apes Down and Rowledge, *Dr. Bell-Salter*, 1845.

A singular parasitic plant, the stem of which is partly subterranean and furnished with closely imbricated leaves of a fleshy texture. Root small, fibrous, attached to the roots of hazle and other trees, as also to the underground stems of ivy, amongst which and decaying leaves it delights to grow. Stem branched, creeping under ground, in which part it is clothed with close-set, imbricated, fleshy and scaly leaves, having a great resemblance to the canine or eye-tooth in the human subject, whence the English name. Flowering branches erect, from 4 or 5 inches to a foot or upwards in height, pale rose-coloured and finely downy above, whitish and naked towards the base. Flowers in a long unilateral spike, flesh-coloured or bluish, nodding, on stalks of about their own length, each with

a broadly ovate or subcordate, pale and shining bractea set closely but obliquely under it. *Calyx* 2-lipped, downy, a little inflated or ventricose, faintly nerved, each lip cleft into 2 broad acute segments closing on the corolla, which projects but little beyond their tips. *Corolla* smooth, tubular, 2-lipped; *upper lip* concave, rounded, either entire or slightly notched; *lower lip* in 3 shallow crisped or plaited lobes, stained and streaked with purple or dark rose-red. *Filaments* a little downy, dilated upwards; *anthers* 2-celled, cohering, fringed along their edges with white hairs; *pollen* white, granular. *Style* glabrous, curved, purplish, and in my specimens, as seems most usually the case, exerted; *stigma* capitate, 2-lobed, glandulose, with a transverse furrow. *Ovarium* nearly glabrous, half surrounded at the base by a yellowish, tumid, somewhat lobed gland. *Capsule* ovate, tipped with the permanent style, at first white and polished, afterwards blackish brown, thin and membranous, of one cell bursting by a longitudinal suture. *Seeds* numerous, roundish, brownish, deeply wrinkled, on 2 large fleshy placentæ, each filling up nearly the half of the cell, and meeting by their flat inner faces.

This plant, like *Melampyrum*, turns quite black in drying or on exposure to the air soon after being gathered. It is a very variable plant in several respects. My plants agree with the figure in E. Bot. in their broad ovate bractea, and with that of the Rev. G. E. Smith (Pls. of S. Kent) in the exerted style and colour of the flowers, but differ from both in having these last much more crowded, though not so much so as in the coarse plant of Fl. Danica, in which they are drawn apparently with the upper lip of the corolla quite entire and with included styles.

For a most interesting memoir on the structure and economy of this singular vegetable, by Mr. Bowman, see Linn. Trans. vol. xvi.

Order LVII. LABIATÆ, Juss.

"And thou hast fragrant herbs and seed,
Which only garden's culture need:
Thy horehound tufts I love them well,
* * * * *
Thy thyme, strong-scented 'neath one's feet,
Thy marjoram beds, so doubly sweet,
And penny-royals creeping twine:
These, each succeeding each, are thine."
Clare.

"*Calyx* tubular. *Corolla* monopetalous, hypogynous, mostly irregular. *Stamens* 4, mostly didynamous, 2 sometimes sterile or wanting. *Ovary* 1, deeply 4-lobed; *style* arising from between the lobes, near their base. *Stigma* 2-lobed. *Achenes* 4, enclosed in the calyx. *Seed* solitary, erect. *Embryo* erect. *Albumen* 0. *Leaves opposite*. *Stems square*."—Br. Fl.

Tribe I. MENTHOIDEÆ, Benth.

"*Corolla* bell-shaped, nearly regular. *Stamens* distant, straight."
—Bab. Man.

* *Stamens* 4.

I. MENTHA, Linn. Mint.

"*Calyx* equal, 5-toothed; its *mouth* naked or rarely villous. *Corolla* nearly regular, 4-cleft; its *tube* very short. *Stamens* diverging, exserted or included. *Anther-cells* parallel."—*Br. Fl.*

1. *M. rotundifolia*, L. *Round-leaved Mint*. Vect. *Horse Mint*. Leaves sessile elliptical obtuse crenato-serrate (upper ones roundish elliptical with sharper serratures) wrinkled and downy above densely shaggy and venoso-reticulate beneath, spikes linear or subconico-cylindrical densely whorled the lowermost whorl a little remote or interrupted, bracts ovate or lanceolate, calyx and pedicels hairy, stems woolly with spreading hairs. *Sm. E. Fl.* iii. p. 74. *Br. Fl.* p. 308. *Benth. Lab.* p. 173. *E. B.* iv. t. 446. *Sole, Menth. Brit.* p. 7. t. 3.

In damp pastures, hedges, wet thickets, and moist places by roadsides, and on the margins of ponds, ditches and streams; chiefly in East Medina, and especially at the back of the island; abundantly. *Fl.* August, September. 24.

E. Med.—Rare about Ryde. At Binstead, near the Rev. Philip Hewitt's, sparingly. Observed in small quantity close to Briddlesford farm. Hedges near Adgeton, and by the pond in the farm-yard at the Grove. Moist valley between Horringford and Perreton,* in some plenty. Abundant in the Undercliff, as at St. Lawrence, in the spot by the road adjoining the Well House, and immediately behind Lord Yarborough's marine villa. Near Newchurch, and abundantly in meadows near Lower Knighton mill, especially in that immediately below the mill-dam, 1843. By the stream-side at Budbridge, and at Bridge, 1843. Sandown marshes in one spot, sparingly, 1849. By the roadside between Alverston and Adgeton, and abundant in a little meadow to the eastward of Alverston lynch, nearly opposite a small cottage. Langbridge, *Mr. Wm. Jolliffe!!* [*Salterns* marsh, not far from the roadside near Pondwell, *Mr. Wm. Dimmick*.—Edrs.]

W. Med.—Brixton village, by a small pool a little N. of the church. Near Atherfield, 1845. By the roadside from Sandrock to Blackgang, in plenty, *Rev. G. E. Smith!!!*

Rhizoma creeping extensively in a horizontal direction, branching at right angles, and emitting bundles of rooting fibres from the joints. *Stem* erect, 1—3 feet high, solid, quadrangular, oppositely branched, clothed with copious soft, spreading, forked, jointed, woolly hairs, which on the upper part of the stem and branches are partially deflexed. *Leaves* opposite, nearly quite sessile, like those of Sage (*Salvia officinalis*) in colour, lower and middle ones broadly elliptical, very obtuse, unevenly crenato-serrate, the serratures mostly blunt or rounded, their margins a little deflexed; upper leaves more acutely serrate, and like those of the whole plant, particularly in its first year, more or less round or rotundato-elliptical; all subcordate at their base, grayish green above, strongly wrinkled and downy with erect, simple, jointed hairs, densely woolly and hoary beneath with longer and forked hairs like those on the stem, and covered with a network of prominent veins. *Spikes* axillary and terminal, disposed in a subpaniculate manner at the summit of the stem and its ultimate branches, linear-cylindrical, tapering or at length obtuse, of numerous densely crowded many-flowered whorls, one or two of the lowermost of which are commonly separated from those above them by an evident though short interval, each whorl subtended by one or more ovate or lanceolate, acute, entire or toothed bracts, hairy chiefly on their under side. *Flowers*

* Pronounced Purton by the country people.

small, pale purplish, often nearly white, on short pedicels that are partially beset with a few deflexed or recurved hairs. *Calyx* campanulate, clothed with stiff hairs, those at its base recurved as on the pedicels, the rest spreading, its teeth broadly lanceolate, erect, often purplish, fringed with rigid erect hairs. *Corolla* much exserted, the throat and segments villous. *Stamens* either included (and sterile, *Benth.*) or a little exserted (and fertile, *Benth.*); *anthers* brownish white, purple or violet. *Style* occasionally protruded, mostly curved upwards.

I have remarked this species to be abundantly naturalized in the pastures of the mountainous districts of Jamaica, at several of the pens or grazing-farms in that island.

? 2. *M. sylvestris*, L. *Horse Mint*. "Leaves subsessile ovato-elliptical or lanceolate sometimes subcordate at the base serrate downy hoary beneath, spikes almost cylindrical scarcely interrupted, bractæas subulate, calyx very hairy, its teeth acuminate." *Br. Fl.* p. 308. *E. B. t.* 686.

In similar situations with the foregoing, but very rare. *Fl.* August, September. 24.

Stated in the 'Botanists' Guide' to have been found in the Isle of Wight by *Mr. S. Woods*, but no locality is given.

† ? 3. *M. viridis*, L. *Spear Mint*. "Leaves lanceolate acute glabrous serrated sessile, spikes cylindrical interrupted, bractæas subulate, calyx-teeth linear-setaceous."—*Br. Fl.* p. 308. *E. B. t.* 2424.

β. Leaves curled. *M. crispa*, *Roth* non *Linn.* secund *Cl. Benth.*

In watery places, by the margins of brooks, ponds, ditches, &c.; very rare, and perhaps not truly wild. *Fl.* August, September. 24.

E. Med.—Naturalized along the little brook passing by Lord Yarborough's marine villa at St. Lawrence, all the way to the beach, being doubtless conveyed thither from the kitchen-garden, through which the stream runs, *Rev. G. E. Smith !!!*

β. Naturalized with α. at the foot of a stone-faced bank below the cliff at Ventnor, near Fisher's hotel.

? 4. *M. piperita*, L. *ex parte* sec. *Benth.* quod negat *Sm.* *Pepper-Mint*. "Leaves ovato-lanceolate or oblong strongly serrated acute slightly hairy stalked, upper ones smaller, spikes lax short obtuse interrupted below, bractæas lanceolate, calyx tubular with lanceolate subulate teeth quite glabrous at the base."—*Br. Fl.* p. 308. *E. B. t.* 687.

In wet places like the last; a doubtful native. *Fl.* August, September. 24.

Near Ryde. By the side of the Medina below Shide, *J. Woods, jun., Esq., B. T. W.*

5. *M. aquatica*, L. *Water Capitate Mint*. "Leaves ovate serrated stalked rounded or slightly cordate at the base, uppermost ones bracteiform and shorter than the flowers, flowers dense in terminal obtuse heads or spikes and sometimes also in remote axillary whorls, calyx tubular, its teeth triangular-subulate."—*Br. Fl.* p. 309. *M. hirsuta*, L.: *E. B. t.* 447.

In wet thickets and hedges, on the banks of streams, ditches, ponds, and in other low watery places; most abundantly. *Fl.* July—September. 24.

? 6. *M. sativa*, L. *Marsh Whorled Mint*. "Leaves stalked elliptical ovate or ovato-lanceolate serrate, upper ones similar but smaller, all longer than the distant dense whorls, calyx with lanceolate acuminate teeth."—*Br. Fl.* p. 309. *Sole, Menth. Brit.* p. 47, t. 21? *M. arvensis* n., *Benth. Lab.* p. 179. *M. gentilis*, L.: *Leight. Fl. Shrops.* p. 275.

In wet hedges and thickets, by river-sides, ditchbanks and other watery places; very rare, and scarcely wild. *Fl.* August, September. 24.

W. Med.—On a hedgebank by the roadside between Calbourne and Brixton, probably not really indigenous, 1841.

Root creeping. *Stem* erect, leafy, from 18 inches to 2 feet in height, solid, quadrangular, furrowed and purple, with many opposite and (in my specimens) short, flexuose, somewhat erect branches, clothed like the stem itself with not very numerous, partly spreading, partly recurved, stiffish hairs. *Leaves* opposite, on very short, broad, channelled and slightly winged petioles, ovate or ovato-elliptical, coarsely, unequally and sharply serrate, strongly depresso-venose, those on the stem (at least the lowermost) scarcely pointed, those of the branches more acute, palish green, most so beneath, where they are sprinkled with numerous round brownish dots, depressed in the centre and interspersed with detached, yellow, resinous particles: the upper surface of the leaves is beset with short, scattered, erect hairs, which are longer and more copious on the under side, particularly along the very prominent ribs. *Flowers* in my specimens rather large, pale bluish purple with some nearly white ones interspersed, in small, dense, axillary, distant and shortly stalked whorls. *Bracts* linear or partly subulate, the two undermost opposite, lanceolato-acuminate, larger than the rest, all hairy beneath and at the edges, flat and glabrous. *Calyx* campanulate, strongly ribbed, sprinkled with yellow resinous particles, the ribs and margins of the erect triangular-lanceolate teeth beset with stiff, whitish, suberect hairs, which in my examples extend partially down to the base of the calyx, and are even seen here and there on the round, shining and otherwise glabrous pedicels, which are about equal in length to the tube of the calyx. *Corolla* a little hairy on the back of the upper lip, otherwise glabrous, the tube about as long as the calyx. *Stamens* included or partly much exerted, as in other species of Mint; *anthers* yellowish, orbicular, flattened.

The herb possesses the agreeable odour of Spear Mint, without much pungency, and like it is cultivated in gardens.

Amidst the utter confusion which still prevails in our knowledge of this most perplexing genus, I cannot quote any figure nor even description with certainty, and indeed is it scarcely possible to do so where the differences that mark the species or varieties shade off so imperceptibly as to defy the limited powers of language to define such nice and evanescent peculiarities. Plates 18 and 21 of *Sole*,—his *M. rubra* and *sativa*, particularly the latter,—come nearest to our plant, but the leaves in each are more acute, yet I have but little doubt of their being both varieties of the same plant, of which our own is another, with more obtuse leaves than is perhaps usual. *Sole's* short and imperfect characters do not assist much, nor are the more detailed descriptions that follow very discriminative. The figures in *E. B.*, t. 2118 and 1413, are still more unsatisfactory; the latter, though bad, has much more resemblance to our plant than the former, which is not like any mint I ever met with, and certainly most unlike *Sole's* pl. 18, *M. rubra*, to which it is referred. Judging from the descriptions, which coincide almost exactly, our Isle-of-Wight plant is the *M. gentilis* of Smith, and of Leighton's *Fl.* of Shropshire.

7. *M. arvensis*, L. *Corn Mint*. "Leaves stalked ovate or elliptical sometimes cordate at the base serrate, upper ones similar and equally large, all longer than the distant whorls, calyx

campanulate, its teeth triangular acute about as broad as long."—*Br. Fl.* p. 310. *E. B. t.* 2119.

In moist waste and cultivated ground, damp cornfields, fallows, on ditchbanks and by streams, ponds, &c.; abundant. *Fl.* August, September. 24.

Rhizoma much branched in all directions, emitting long, white, downy and swollen suckers intermixed with brownish fibres, and occasionally a few leafy scions from the crown. *Stem* 1 or more, scarcely exceeding a foot in height, mostly much less, procumbent or even prostrate, simple or more commonly copiously branched, the branches widely spreading or divaricate, and as well as the stem hispid with long, white, mostly decurved hairs. *Leaves* opposite, dull grayish green, all stalked, ovate or ovato-elliptical, rounded, subcordate, tapering or cuneate and entire at base, somewhat obtusely pointed, more rarely acute, with several distant, shallow, crenate serratures, strongly depresso-venose, rough on both sides with erect or curved hairs, and dotted, as seen under a glass, with extremely minute pellucid points. *Petioles* not $\frac{1}{4}$ th the length of their leaves, very hairy. *Verticillasters* axillary, distant, many-flowered, depresso-globose, dimidiate, each semiwhorl with a pair of narrow, hairy, recurved bracts at the point of union of the pedicels. *Pedicels* smooth, slender, mostly glabrous or very nearly so, sometimes considerably hairy, longer than the common peduncle, which, in the superior whorls at least, is so short as to make the latter appear sessile. *Calyx* very hairy without, glabrous within except at the mouth, tubular-campanulate, ventricose after flowering (10-ribbed?), resinoso-glandulose; its teeth erect, short, equilaterally triangular, acute but not at all acuminate. *Corolla* pale bluish purple or nearly white, twice as long as the calyx, hairy without and at the throat within. *Stamens* either much exerted and fertile, or included and sterile, often both in the same flower, or wanting. *Style* shorter or longer than the stamens.

The peculiar odour of this species has been justly compared to that of mouldy cheese.

8. *M. Pulegium*, L. *Pennyroyal*. "Flowers whorled, leaves ovate downy obtuse subcrenate, stem prostrate, flower-stalks slightly and calyx very pubescent, teeth of the latter fringed."—*Br. Fl.* p. 310. *E. B. t.* 1026.

On moist watery heaths and commons, village-greens, and the shallow grassy edges of pools and plashe in such situations, but rarely. *Fl.* July, September. 24.

E. Med.—On St. Helen's green, very sparingly, 1838—1839, but where, I am told by the villagers, it is in certain seasons abundant.

W. Med.— "I think in the plantation on the left hand approaching the castle (Carisbrooke) from Newport," *G. Kirkpatrick, Esq.*

** *Stamens* 2.

II. LYCOPUS,* *Linn.* Gipsywort.

Calyx tubular, 5-cleft. *Corolla* tubular, limb nearly equal, 4-cleft, upper segments emarginate. *Stamens* distant, simple. *Achenia* truncate, their summits sprinkled with glandular dots.

1. *L. europæus*, L. *Common Gipsywort. Water Horehound.* "Leaves deeply and irregularly pinnatifid-serrate, rudiments of

* Name from *λυκος*, a wolf, and *πους*, a foot, from a supposed resemblance in the cut leaves to a wolf's paw; in German, *Der Wolfsfuss*. Gipsies are said to dye their skins darker with this plant, whence the English name of Gipsywort.

the sterile stamens minute, achenes about as long as the calyx-tube."—*Br. Fl.* p. 306. *Sm. E. Fl.* i. p. 34. *E. B.* xvi. t. 1105. *Benth. Lab.* p. 186.

In and on the margins of ponds, ditches, rivers and brooks, in wet meadows, pastures and woods; frequent. *Fl.* June—September. *Fr.* September? October. 2l.

E. Med.—About Ryde, frequent, as at Ninham, by the pond and elsewhere. Ditches on Sandown level. By the stream at Bridge near Godshill, and in various places on the moors between Godshill and Buddbridge, 1843. About the margins of what was formerly a pool, called Swan pond, in a wood near Whitefield farm, 1844. Ditches on the moors near Rookley. Pond near Hardingshoot farm, abundantly.

W. Med.—In the boggy part of Beckett's copse, Freshwater, 1845. West bank of the Yar, just below Freshwater mill. Very common about Kingston. Gurnet bay.

Root creeping, fibrous. *Stem* erect, 2 or 3 feet high, solid, downy, quadrangular, with a deep furrow on each face, and bearing many opposite, erect, leafy branches. *Leaves* opposite, nearly sessile, ovato-lanceolate, very acute, deeply and sharply inciso-serrate in the upper, almost pinnatifid in the lower half of the superior leaves, those nearest the root quite so towards the base, dull green, rather soft and downy, with inflexed edges. *Flowers* minute, sessile, in small, dense, rather oblong whorls, embracing the stem at each pair of leaves, and subtended by numerous linear bracts. *Calyx* very short, hairy, its teeth subulate, nearly equal. *Corolla* scarcely longer than the calyx, shaggy, especially within, white, the lower lip with a few purple spots; upper lip broader and shorter, its margin erect with a central notch, the lateral lobes entire, spreading. *Stamens* 2, sometimes, it is said, 4, exserted, very distant, placed about half way up the tube; *anthers* lunate, their lobes united at the summit only; the *filaments* inserted beneath the centre of junction: this union of the cells appears to be effected by an expansion of the filament into a broad membranous back (connectivum), to which the cells are attached, and as it were incorporated with it. *Style* but little exserted; *stigma* bifid. *Seeds* 4, 3-cornered, their outer face concave, the two inner flat, their summits plane or truncate, covered with pellucid resinous granules, and edged with a raised thickened border: the seeds have a moist feel, and adhere to any object they come in contact with, from the oily or resinous matter which covers them, and imparts a faint but not very pleasant aroma.

Tribe II. *MONARDEÆ*, *Benth.*

"*Corolla* 2-lipped. *Stamens* 2, fertile, parallel under the lip of the corolla."—*Bab. Man.*

III. *SALVIA*, *Linn.* Sage or Clary.

"*Calyx* 2-lipped, tubular. *Corolla* labiate; the tube dilated upwards and compressed. *Stamens* 2. *Filaments* with 2 divaricating branches, 1 only having a perfect single cell of an anther."—*Br. Fl.*

††? 1. *S. pratensis*, *L.* *Meadow Clary.* Lower leaves mostly subcordato-oblong irregularly serrato-crenate stalked, upper stem-leaves semiamplexicaul, bractes small shorter than the calyx, corolla twice as long as the calyx viscid and glandular on its much arched upper lip. *Sm. E. Fl.* i. p. 34. *Br. Fl.* p. 307.

E. B. iii. t. 153. *Benth. Lab.* p. 233. *Wahlenb. Fl. Suec.* i. p. 16; *Fl. Upsal.* p. 10.

In dry (and especially) chalky pastures and borders of fields; very rare, and doubtfully indigenous. *Fl.* June, July. 24.

E. Med.—In an old chalk-pit in Appuldurcombe park, *Miss Georgiana Kilderbee*. In Mrs. Vine's grounds at Puckaster? [In a pasture-field at Niton, 1854, *G. Kirkpatrick, Esq., Edrs.*]

I have seen but a single though indubitable specimen of this very rare British native in the herbarium of the lady on whose authority I insert it here, sent to her, with some other wild plants, in a fresh state, from Appuldurcombe, and which on inquiry was ascertained to have been gathered by a groom of Lord Yarborough's, in the locality above mentioned, July, 1838, but where I have since sought for it in vain.

2. *S. verbenaca*, L. *Wild English Clary*. Leaves sinuate and serrated, corolla narrower and scarcely longer than the calyx. *Sm. E. Fl.* i. p. 35. *Br. Fl.* p. 307. *E. B.* iii. t. 154. *Curt. Fl. Lond.* fasc. vi. t. 1. *Benth. Lab.* p. 239.

β. Flowers larger, corolla more exerted.

In dry and especially chalky meadows and pastures, on banks, waste ground and by roadsides; not unfrequent. *Fl.* May—October. *Fr.* June, &c. 24.

E. Med.—Scarcely found about Ryde. Binstead, sparingly. Common at Bonchurch, and plentifully at Ventnor on banks facing the sea, in the Cove, &c. Along the Undercliff in various places.

W. Med.—By Freshwater church, and elsewhere in that parish, frequent.

β. By the Old Church sea-mark, St. Helens.

Root woody, tapering. *Stems* 1 or more, herbaceous, a foot or two in height, erect or a little ascending and purplish at the base, obtusely quadrangular, hollow in the centre, rough with short spreading or deflexed pubescence, mixed near the summit with glandulose and somewhat glutinous hairs, simple or branched, the branches opposite, simple, erect, the inferior more or less leafy, the superior reduced to mere (and excepting the bracts) leafless racemes. *Leaves* of a rather pale grayish green, wrinkled, slightly rough or scabrous only with minute bristly hairs and asperities, paler beneath, with stout prominent ribs, and dotted with close-set vesicular glands; the radical and lowermost stem-leaves on very long, flattened and slightly winged petioles, oblong or ovato-oblong, from about 3 to 5 inches in length by 2 or 3 inches in breadth, more or less cordate and unequal at the base, usually obtuse and rounded, at other times a little pointed, coarsely and unequally crenate and serrate, more or less profoundly sinuate and incised-lobed, sometimes even lyrate or pinnatifid, those at the root often nearly undivided; superior stem-leaves broadly ovate or ovato-rotundate, acute or shortly acuminate, usually more sharply notched or cut than the others, quite sessile, clasping and sometimes even connate by their broad cordate bases. *Flowers* in simple, erect, terminal and axillary, constantly elongating racemes, of which that at the summit is but a continuation of the stem, and with the two shorter ones at its base constitutes a sort of ternate, leafless and virgate panicle. *Whorls* almost always 6-flowered, dimidiate, remote, when in seed from about an inch to an inch and a half asunder. *Pedicels* very short and hispid. *Bracts* sessile, very broadly cordate or rotundato-cordate, acuminate, deflexed, shorter than the whorls, mostly entire, the lowermost sometimes a little notched, their points blackish. *Calyx* a little deflexed in seed, about 3 or 4 lines in length, grayish green and purplish, somewhat glutinous, hispid with simple and gland-tipped hairs, 2-lipped, with 14 prominent purple ribs; the lips fringed with long white hairs; *upper lip* rather shorter than the under, curved upwards, when viewed from above obovate and deeply depressed anteriorly, with a sharp keel ending in the middle tooth of its tridentate apex, the 2 lateral teeth connivent, minute; *lower lip* a little ascending, deeply bifid, the segments ovato-lanceolate, aristato-acuminate, 3-ribbed. *Corolla*

small, usually but little longer than the calyx, deep violet-blue; *upper lip* hairy. *Anthers* linear. *Style* much exserted, filiform, violet and little hairy in its upper part, deeply bifid, with acute divaricate segments. *Achenia* roundish ovate, very bluntly trigonous, dull black and wrinkled or covered with depressed dots.

Many real and more imaginary virtues have been attributed to Sage in all times, even to the power of conferring immortality, if we may credit the classical muse of the Schola Salmitana,

"Cur moriatur homo, cui Salvia crescit in horto?"

Tribe III. SATUREINEÆ, Benth.

"*Corolla* 2-lipped. *Stamens* 4, distant; *cells of anthers* separate, divergent; *connective* dilated."—Bab. Man.

IV. ORIGANUM, Linn. Marjoram.

"*Spikes* (or *heads*) of flowers somewhat 4-sided, resembling a catkin, imbricated with *bracteas*. *Calyx* equally 5-toothed (or 2-lipped). *Corolla* with the upper lip erect, nearly plane; lower one patent, trifid. *Stamens* diverging, *connectivum* subtriangular."—Br. Fl.

1. *O. vulgare*, L. *Common Marjoram*. "Heads of flowers roundish paniced crowded, *bracteas* ovate longer than the calyx, calyx equally 5-toothed hairy in the throat, leaves stalked broadly ovate obtuse entire or toothed."—Br. Fl. p. 311. E. B. t. 1143.

On dry hilly pastures, banks, in rough stony woods and steep bushy places; abundant on the chalk. Fl. July—September. 24.

E. Med.—Brading and Yaverland, in abundance. Steepphill, B. T. W.

W. Med.—Profusely and very fine on chalky slopes in the woody valley near Rowledge, 1843. Carisbrooke and the castle, B. T. W.

Nuts minute, purplish brown, roundish ovoid, more or less triquetrously compressed, pointed at the base, smooth and glabrous, not shining.

This plant, if not originally native, is completely naturalized in some parts of the United States. I have seen it plentifully in the woods at Hoboken, New Jersey, near Philadelphia, and elsewhere.

V. THYMUS, Linn. Thyme.

"*Flowers* whorled or capitate. *Calyx* with 10—13 ribs, tubular, 2-lipped; *upper lip* 3-toothed, lower one bifid; the *throat* hairy. *Corolla* with the upper lip erect, nearly plane; lower patent and trifid. *Stamens* diverging. *Anther-cells* at first nearly parallel, afterwards diverging; *connectivum* subtriangular."—Br. Fl.

1. *T. Serpyllum*, L. *Wild Thyme*. *Mother of Thyme*. "Flowers capitate, stems branched decumbent, leaves plane ovate obtuse entire petiolate more or less ciliated at the base, floral leaves similar, teeth of the upper lip of the calyx ovato-lanceolate of the lower subulate ciliated, upper lip of the corolla notched ovato-quadrangular."—Br. Fl. p. 311. E. B. t. 1514.

β. *citriodora*. Lemon-scented Thyme.

γ. Stem and leaves very hairy.

On dry turfey banks and heathy pastures, and heathy hilly places; abundantly. Fl. July—September. 2f.

β. Roadside near the Sandrock spring.

γ. Not uncommon about Ryde, &c.

Dr. Darlington tells us that within his recollection it was a prevalent vulgar notion in America that wild Thyme sprung up spontaneously in spots where human blood had been spilt by any casualty or violence, *Fl. Cest.* p. 347. The idea, though revolting, is not without its poetry, but how widely different from the images of peace and repose which the thyme-covered bank suggests to the rustic muse in Europe.

Common or garden Thyme (*Thymus vulgaris*) is naturalized on the wall of a garden at Niton.

Tribe IV. *MELISSINEÆ*, Benth.

"Corolla 2-lipped. Stamens distant. Anther-cells connected above."—Bab. Man.

VI. *CALAMINTHA*, Mœnch. Calamint.

Verticillasters axillary, stalked, cymosely dichotomous, with minute subulate bracts, few- or many-flowered and forming lax secund racemes. *Calyx* tubular or subcampanulate, many-ribbed, distinctly 2-lipped, scarcely gibbous at base, the mouth hairy within. *Corolla* with the upper lip straight, nearly flat, lower lip 3-lobed, patent.

* "*Calyx* gibbous at the base below. Middle lobe of the lower lip of corolla nearly entire. Whorls of about 6 simple 1-flowered pedicels, with almost no bractæas. Acinos."—Br. Fl.

1. *C. Acinos*, Clairv. *Basil Thyme*. Stem ascending branched, leaves oblong on short stalks acute serrated more or less ciliated at the base. *Br. Fl.* p. 321. *Thymus*, L.: *E. B.* t. 411. *Acinos vulgaris*, Pers.

β. Flowers pure white.

In dry, open, chalky, gravelly or sandy fields, fallows and stony hilly pastures; not uncommon. Fl. June—August. ☉.

E. Med.—Field in the angle formed by Eagle-head and Bloodstone copses, near Ashe, plentifully, 1838. On Kennerley heath, and in sandy fields about Newchurch, Bordwood, Queen Bower, &c., frequent. Abundant in high chalky fields above Sandown bay, near the Culvers, 1848. Fields near Bembridge down, *W. Wilson Saunders, Esq.* Near Princlade, *Mr. D. Snooke*.

W. Med.—Between Thorley and Shalcombe. Near Alum bay. About Carisbrooke castle, *Mr. D. Snooke*.

β. Sandy ground below Queen Bower, in some plenty, 1843.

Leaves ovate, with distant serratures. *Flowers* mostly 6 in a whorl, violet, centre of the lower lip white, the middle lobe with a dark purple spot. *Calyx* gibbous beneath at the base, its mouth guarded by dense white hairs directed outwards, the rest of the tube very smooth and shining. *Style* a single incurved point, not cleft as in most of this natural order. *Seeds* very small, brown, obovate and pointed at the base, where there are two depressions, covered with minute gray meal which easily rubs off, otherwise quite glabrous.

The var. β . is a very pretty one, from the pure whiteness of the flowers, unmixed with any trace of the usual coloured spots.

** "*Corolla nearly equal at the base. Middle lobe of the lower lip of corolla emarginate. Whorls of 2 lax peduncled cymes. Bractæas minute. Calamintha*" —*Br. Fl.*

2. *C. officinalis*, Mœnch. *Common Calamint.* "Stem herbaceous with loose ascending branches, leaves stalked broadly ovate obtuse crenato-serrate green on both sides, cymes stalked few-flowered shortly dichotomous or umbellate, calyx distinctly 2-lipped, teeth with long ciliæ, those of the upper lip triangular straight or ascending, of the lower subulate and longer, hairs in the mouth not prominent, lobes of the lower lip of the corolla distant, middle one the longest."—*Br. Fl.* p. 322. *Mœnch. Method.* p. 409? *Blackwell, Herb.* tab. 166 (certe nostra, sed flores malè color). *Gaud. Fl. Helv.* iv. p. 88. β . *parviflora?* *confer obs. ad calcem. descript.* p. 89. *Matth. Volg.* ii. p. 716, fig.? *Melissa Calamintha*, *L.* *Thymus Calam.*, *Sm. E. Fl.* iii. p. 109. *E. B.* xxiv. t. 1676, flores nimis magni.

In dry, open, sunny situations, on banks, by roadsides, borders of fields and amongst rocks, chiefly on a gravelly or calcareous soil; rare. *Fl.* July—September. 2.

E. Med.—Plentiful in the rocky ground above Bonchurch, now (1843) probably in a great measure extirpated by building. By the roadside above Apse heath. Ruins of Quarr abbey, *Mr. Thos. Meehan, jun.!!* Near the Parsonage, Yaverland, but sparingly, *Dr. Bell-Salter.* Sparingly between Quarr abbey and Fishbourne, near Quarr house, 1837.

W. Med.—Frequent on hedgebanks by the roadside between Thorley and Wel-low. A few plants in the park at Swainston, 1843. Along the road from Carisbrooke to Buccombe. About Carisbrooke village and castle, and near some cottages at Thorley, in plenty, *Mr. D. Snooke!!!*

Root stout, hard, woody and tortuous, covered with a dark brown wrinkled bark, knotty at the crown, composed of several thick flexuose fibres that are much branched, though far less copious than in the next species, mostly inclined to a horizontal direction, and emitting similar but far less abundant and less slender filaments: the root, though running pretty far, has nothing of the nature of a rhizoma, and cannot therefore be properly called creeping, being neither jointed nor stoloniferous, the nascent stem proceeding from the crown alone above-ground or just beneath the surface. Stems several, a foot or 18 inches high, mostly ascending or even decumbent beneath, lax and spreading, their upper part erect; tetragonous, downy all over with long, white, spreading hairs, copiously and oppositely ramified with variously spreading lax branches, filled like the stem itself with a fine, white, cellular tissue. Leaves opposite, on flattish hairy petioles of nearly half their length, very broadly ovate, roundish ovate, almost deltoid or rhomboidal, subcordate, bluntish or subacute, the uppermost often distinctly pointed, pale green, ciliated and downy on both sides with jointed hairs curved forwards, resinoso-punctate beneath with prominent very hairy ribs, the margins with few distant, very shallow, crenate serratures, and entire at the base. Flowers in opposite, axillary, secund, stalked and imperfectly whorled clusters of from 4 to 6 or 8 in each, on a common peduncle more or less elongated, but sometimes so short that the clusters appear sessile, pale purple or pinkish, with violet spots in the throat and on the lower lip. Pedicels round, hairy, variable in length, as long as or longer than the calyx, each with one or several linear or subulate fringed bracts at its base or at the forks of the common stalk. Calyx tubular, a little ventricose or inflated below near the base, with 13 very prominent purplish ribs, rough with curved hairs pointing forwards, the intercostal spaces sprinkled with

pale yellow resinous globules; upper lip in 3 equal, acute, triangular, almost recurved segments; lower lip much longer than the upper, in 2 subulate slightly incurved segments, all of which are fringed with long, stiff, pectinate hairs extending into and across the mouth of the calyx when in seed, but not in general projecting beyond the cavity. *Corolla* twice as long as the calyx, hairy externally and sprinkled with resinous particles, with a narrow slender tube which is villous within; *upper lip* ovate, erect, emarginate, the edges a little reflexed, purplish; *lower lip* nearly plane, trifid, the 2 lateral lobes rounded, entire, tinged with purple, the middle lobe longer, broader, roundish heart-shaped, entire or very slightly emarginate, with a spot of bright purple in the centre, and several streaks and blotches of the same colour between it and the throat of the corolla. *Anthers* pinkish, the lobes very remote and united by a fleshy connectivum, not cohering in pairs. *Style* glabrous; lower lobe of the *stigma* plane, grooved, much longer than the upper. *Seeds* (nuts) minute, palish brown or partly whitish, roundish ovoid, with one obtuse (inner) angle, roughish and thickly dotted with depressed points.

This plant, from its scent and general appearance, might more properly be called Wild Basil than *Chiropodium vulgare*, which has much the aspect and odour of that exotic herb.

3. *C. sylvatica*, Nob. *Wood Calamint*. Stems somewhat ascending lax with a few distant elongate nearly erect branches, leaves ovate mostly acute sharply serrate, cymes many-flowered stalked, lower lip of corolla with contiguous segments, middle lobe scarcely longer than the two lateral broad and shallow, upper calyx teeth erect or recurved, root partly creeping. *Br. Fl.* p. 322. *C. officinalis*, *Reichenb. Fl. Germ. Excur.* No. 2244? *Godson, Fl. de Lorr.* ii. p. 208, descr. bona. *M. Calamintha*, *Benth. Lab.* p. 388 (fide cl. auctore ipso) (sed non *Linn.*) *Hoppe, Ect. Plant.* tab. 613 (nec *Linn.*). *Thymus Calamintha*, *Bertol. Fl. Ital.* vi. p. 223.

In sheltered shady places, woods, thickets, and on bushy declivities; very rare. *Fl.* August—October. 24.

Profusely in woods on the western sides of a small valley between Apes down and Rowledge farms, rather less than three miles W.S.W. of Newport: first discovered by me as a species new to Britain, Aug. 29, 1843.

Root much slenderer than in the last, woody, brownish, very copiously branched and comosely fibrous, emitting, chiefly from the top, long, jointed and finally woody suckers or rhizoms, that creep horizontally under ground, and, again branching at various angles, give off anew flowering stems and rooting fibres as in *C. Clinopodium*, to which species the present closely approaches in habit and structure. *Stems* several, from about 1 to 2 feet or more in height, erect, ascending or reclining, wavy, lax and slender, filled with pith, bluntly quadrangular, not winged, more or less branched, but far less ramified than in *C. officinalis*, the branches opposite, erect, and, as well as the main stem, hispid with long, white, spreading or partly decurved, rigid and simple hairs, but less copiously than in *C. officinalis*. *Leaves* opposite,* light green, paler beneath, but brighter or less gray than in *C. officinalis* and considerably larger, 2 or 3 inches (excluding the petiole) in length, more closely, acutely and deeply serrated, pointed or often somewhat obtuse, slightly attenuated rather than rounded at base, though a few of the lower leaves occasionally assume the ovato-rotundate form, with the shallow serratures

* My friend N. B. Ward, Esq., gathered a specimen having all the leaves in threes, a very unusual deviation from the normal structure in plants of this natural order. (*Ward in litt.*)

of *C. officinalis*, otherwise similar, those accompanying the whorls rapidly diminishing in size. *Flowers* large, handsome, in secund, subcymose or subpaniculate clusters or false verticils, arranged in pairs or one from the axil of each opposite leaf, on a more or less elongated common stalk or peduncle (in the lowermost pair or two often an inch or more long), curved upwards or ascending, parallel to each other or widely diverging, the clusters themselves spreading, simply subdior tri-choromously forked, or, as in *C. officinalis*, somewhat umbellate, but less completely, each division with several linear-lanceolate or subulate, unequal and ciliated bracts at its base. *Pedicels* very unequal, terete, hispid. *Calyx* distinctly 2-lipped, not much larger than in *C. officinalis*, the teeth brownish purple, the 3 upper ones erect or (especially after flowering) considerably recurved, the 2 inferior, as in that species, longer than the upper, slender, curved upwards and pectinato-ciliate; the tube, as Mr. Bentham remarks, naked or nearly so within, or clothed with similar converging hairs to those of *C. officinalis*, but outwardly with much fewer and shorter hairs than in that, sprinkled with similar resinous glands. *Corolla* pale purplish, rose- or peach-blossom-red, downy all over externally, variable in size, but always larger, broader and differently coloured from *C. officinalis*, those of the lower verticils about $\frac{3}{4}$ ths of an inch long (1—1½ inch, *Benth.*), nearly three times the length of the calyx, smaller and deeper coloured; *upper lip* nearly as in *C. officinalis* but rounder, with a similar emargination; *lower lip* with the lobes much broader and more rounded than in that, slightly waved and crenulate, the middle lobe but little exceeding the 2 lateral in length, very broad and shallow, its posterior and lateral margins rounded and overlapping, or overlapped by the lateral lobes and concealing the sinus between them; (in *C. officinalis* the lobes are very distinct and widely separated from each other, the middle one greatly longer than the rest and wedge-shaped at the base); *palate* with 2 bristly prominences, and, as well as the *throat* and disk of the middle lobe, beautifully variegated with white, and spotted deep rose-colour or rich crimson. *Nuts* somewhat larger and darker coloured than in *C. officinalis*, and, in my specimens at least, less thickly and deeply punctate or nearly smooth, otherwise exactly similar.

Our plant is exceedingly well described (root excepted) by Bertoloni in *Fl. Ital.*

In the form of the corolla the present species approaches very closely that of *C. Clinopodium*.

The scent of the herbage is more agreeable than in *C. officinalis*, and either fresh or dried partakes strongly of the odour of peppermint, but milder.

This beautiful species grows readily from slips, and when treated as a greenhouse plant, or kept entirely within doors, becomes extremely showy; the flowers are produced in much greater number, and, though somewhat paler than in the wild state, are increased in size, and crowded unilaterally on long leafy branches, appearing almost one mass of blossoms.

Pollini notices the resemblance in the odour of *Melissa grandiflora* to that of peppermint, as in our *C. sylvatica*.

*** " *Calyx* nearly equal at the base. *Middle lobe of lower lip of corolla* notched. *Whorls sessile, dense, many-flowered, with numerous linear bracteas, forming a sort of involucre.* *Clinopodium.*"—*Br. Fl.*

4. *C. Clinopodium*, Benth. *Wild Basil.* "Leaves ovate

Melissa officinalis (Common Balsam) has been found growing in Sandy lane, between Whitecroft and Blackwater; and I find it on a bank not a hundred yards from the church, where it is naturalized under a garden wall. It is said to be found apparently indigenous in Somersetshire and other parts of the W. of England, but is with us here certainly but the outcast of gardens.

obscurely serrated, whorls hairy, bractæ setaceous, pedicels branched."—*Br. Fl.* p. 322. *Clinopodium vulgare*, L.: *E. B. t.* 1401.

In woods, thickets and bushy hilly places, on banks, about hedges and borders of fields, on a dry gravelly or calcareous soil; frequent. *Fl.* July—August. 24.

E. Med.—Common about Ryde.

W. Med.—Common everywhere in woods about Swainston and Rowledge. Plentiful about Thorley, Yarmouth, Calbourne, Apes Down, &c.

Seeds very small, roundish triquetrous, quite smooth, chestnut brown, the scar white, marked on the back with about 3 very slender scarcely prominent ribs.

Tribe V. *SCUTELLARIÆ*, *Benth.*

"*Stamens* approximating, parallel under the upper lip of the corolla. *Calyx* 2-lipped, closed in fruit."—*Bab. Man.*

VII. *PRUNELLA*, *Linn.* Selfheal.

"*Calyx* ovate; upper lip plane, more or less distinctly 3-toothed; lower one bifid. *Corolla* with the upper lip nearly entire, arched; lower one 3-lobed. *Filaments* with two teeth at the extremity, one bearing the 2-celled anther. *Style* bifid."—*Br. Fl.*

1. *P. vulgaris*, L. *Common Selfheal.* "Leaves stalked oblong-ovate, upper lip of the calyx truncated, its teeth usually obsolete, the teeth of the lower lip ovato-lanceolate mucronate, corolla scarcely twice the length of the calyx."—*Br. Fl.* p. 323. *E. B. t.* 961.

In meadows, pastures, fields and hedges; by roadsides, in heathy ground, woods, thickets and waste places; everywhere. *Fl.* July, August. 24.

VIII. *SCUTELLARIA*, *Linn.* Skull-cap.

"*Calyx* broadly ovate, having a conspicuous concave tooth or scale on the upper side; its 2 nearly equal entire lips closed after flowering. *Corolla* with the tube much exerted; upper lip straight arched; lower one trifid. *Filaments* simple; *anthers* of the 2 lower stamens 1-celled. *Style* bifid, upper lobe very short."—*Br. Fl.*

In the structure of the flowers, and in general habit, this genus betrays the strong affinity of the natural orders Labiatae and Scrophulariaceae.

1. *S. galericulata*, L. *Common Skull-cap.* "Stem branched divaricated, leaves crenato-oblong or ovato-lanceolate rounded or cordate at the base, flowers axillary solitary opposite secund, calyx downy without glands."—*Br. Fl.* p. 324. *E. B. t.* 523.

On the banks of rivers, streams and ditches, the shallow margins of ponds and swampy ground, and in wet woods and thickets; not very frequent. *Fl.* July, August. 24.

E. Med.—Near Ninham farm. Marsh-ditches at Yarbridge, frequent; and in many parts of Sandown level; especially plentiful a little below Horringford

bridge. Near Blackwater mill. In a large willow-thicket by Budbridge farm. Marsh-ditch in a meadow nearly under Marshcombe copse. In a wet copse near Whitefield farm, about what was formerly a pool called the Swan Pond, in some plenty. Near Rookley farm, sparingly, 1844. Wood near the sea-shore between Ryde and Binstead, *Wm. Wilson Saunders, Esq.*

W. Med. — At West mill, between Newport and Carisbrooke, in plenty, *Miss Dennett!* By the Medina, between Newport and Shide, sparingly, *Mr. Snooke.*

Root or rather rhizoma whitish, creeping horizontally, fibrous at the joints. *Stem* from about 1 to 2 feet in height, erect, or in damp shady places weak and reclining, subsimple or oppositely branched in the upper part mostly, the branches slender, simple and erect; hollow, brittle, acutely quadrangular, the angles subulate, the faces flat, with a raised moulding on two of the sides alternately; nearly glabrous below, roughish above with short, recurved, strigose pubescence along the angles chiefly, often purplish. *Leaves* opposite, more or less erect, sometimes widely spreading, and in the procumbent form with their surfaces in the plane of the stem and at right angles to it, from about 1 to 2½ or 3 inches long, pale green, thin and membranous, oblong-lanceolate, more or less acutely pointed, cordate at base, their somewhat revolute edges unequally, distantly and shallowly crenato-serrate; wrinkled and slightly pubescent or nearly glabrous above, more downy, pale whitish green and prominently veined beneath. *Petioles* very short, from less than a line in length in the higher and smaller to 4 or 5 lines in the lower and larger leaves, semiterete, channelled above and downy. *Flowers* solitary, opposite, axillary and secund, approximated in pairs chiefly on the higher part of the stem and branches. *Pedicels* scarcely a line in length, subcompressed and downy, with a pair of extremely minute subulate bracts at their base. *Calyx* about 2 lines in length, finely downy with recurved pubescence, sometimes glabrous, (*Leight.*), tubular-campanulate, truncate, very shallowly almost obsoletely 2-lipped, the lips equal, entire; indistinctly ribbed, and bearing towards the base of its superior half an upright, transverse, flat scale-like process or pouch, formed by a duplicature of the calyx, of a rectangular figure, rounded at the corners and slightly emarginate, concave at the back: after flowering the anterior portion of the calyx changes its former cylindrical shape; its 2 lips or inferior and superior surfaces become plane and pressed together, closing the mouth entirely; the calyx then splits throughout its whole length along its two lateral rib-like sutures, the dehiscence extending across the saccate process, whence the entire upper half of the calyx is thrown off, leaving the under half persistent. *Corolla* from about 6 to 9 lines in length, downy with still finer, softer and more erect pubescence than the calyx, ascending, 2-lipped, the throat dilated, purplish blue with about 12? deeper-coloured ribs; tube cylindrical, many-ribbed, scarcely the length of the calyx, greenish white, glabrous, forming a moderately abrupt bend with the ascending funnel-shaped limb of the corolla, and a gibbosity at the inferior angle of flexure with the latter; *upper lip* deep purplish blue, galeate, slanting forward over the lower, and nearly closing the orifice between them, its middle lobe vaulted, obliquely ascending, emarginate in front, its roundish narrow border turned back; lateral lobes obliquely ascending and approximate above under the central lobe, their margins strongly revolute; *lower lip* rather longer and much broader than the upper, nearly semicircular, in 3 rather shallow sometimes indistinct lobes, blue, the centre white and spotted with purple, sometimes with 3 grooved lines of the same colour, entire or slightly waved or crenulate, the middle lobe emarginate. *Stamens* as well as the style included, and lodged with it in the oblong inflated convexity or crown of the upper lip; *filaments* dilated and downy in the middle; *anthers* densely villous, scarcely cohering, the lobes dark purple; those of the longer pair of stamens united by a very prominent or crest-like and hairy connectivum. *Style* whitish, cylindrical, glabrous, tapering from its simple, acute, slightly decurved apex.

Bentham ascribes to the common European plant glabrous stems and leaves, his var. *β. Lab. p. 437.*

2. *S. minor*, L. *Lesser Skull-cap*. "Glabrous, leaves shortly stalked obtuse mostly quite entire, lowest ones broadly ovate, intermediate ones ovato-lanceolate cordate and somewhat hastate at the base, upper and floral ones lanceolate rounded at the base, flowers (small) solitary axillary opposite unilateral, corolla nearly glabrous with the throat dilated, calyx downy without glands."—*Br. Fl.* p. 324. *E. B. t.* 524.

In low, moist, heathy, boggy or muddy places, wet woods, sides of meadow-drains, ditches, and on damp tillage-land; not uncommon. *Fl.* July—October.

E. Med.—In Whitefield wood. Extremely abundant on Apse heath, growing even amongst potatoes on newly turned-up land. In various parts of Sandown level. Frequent on many parts of Lake common. Common about the foot of Bleak down, around Lashmere pond, &c., 1843. [Boggy slope behind St. Helens green,—also at Lane-end, Bembridge, *A. G. More, Esq.*—Edrs.]

W. Med.—[Moortown bog, Brighstone,—and the bog at Freshwater Gate, *Dr. Bell-Salter*.—Edrs.]

Much smaller than the last in all its parts, seldom above 4—10 inches high, except when drawn up amongst herbage to almost twice that height. *Root* slender, pale straw-yellow, running far and wide with many long creeping branches that spread in all directions. *Stem* erect, with 4 winged angles, more or less branched, often copiously so from the very base, so as to be quite bushy, the branches opposite, ramified, purplish at the base, roughish with short stiff hairs. *Leaves* numerous, opposite, dark green, ovato-oblong, cordate at the base, the lowermost on extremely short petioles, the uppermost all but sessile, their margins slightly revolute and deflexed, roughish above with short bristly hairs, entire, the lowermost only subhastate from an occasional blunt dentate sinuation or two near the base. *Flowers* solitary in the axil of each leaf, on rather short, horizontal, hairy pedicels at right angles to the leaves, hence secund and approximating in pairs, $\frac{1}{3}$ rd of an inch long, of a dilute pink or purplish colour, the lip prettily speckled with rose-red. *Bracts* in pairs at the base of each pedicel, very minute, setaceous. *Calyx* about a line in length, almost bell-shaped, bristly. *Corolla* much longer than the calyx, downy, the throat hairy; *upper lip* in 3 very distinct nearly equal lobes, the middle one arched and enclosing the style and stamens; *lower lip* in one broad, scarcely lobed, waved and crenate segment. *Filaments* and *anthers* villous. *Style* glabrous. *Seeds* rounded, granulated, seated on a reddish or orange-coloured gland.

Tribe VI. *NEPETEÆ*, Benth.

"*Stamens approximating, parallel under the upper lip of the corolla, 2 inferior shortest. Calyx tubular.*"—Bab. Man.

[IX. *NEPETA*, Linn. Cat-mint.

"*Calyx tubular, many- (15-) ribbed, its mouth usually a little oblique, 5-toothed. Corolla with the tube exserted; upper lip straight, emarginate or bifid; lower 3-fid. The two anterior stamens the shortest. Anthers before bursting approaching in pairs; cells diverging.*"—*Br. Fl.*

1. *N. Cataria*, L. *Cat-mint*. "Stems erect, flowers in spiked subpeduncled dense many-flowered whorls, leaves stalked cordate inciso-serrate whitish pubescent beneath."—*Br. Fl.* p. 320. *Sm. E. Fl.* iii. p. 70. *E. B.* ii. t. 137.

On gravelly and chalky banks, in waste places, along fences, hedges and roadsides, but rarely. *Fl.* July—September. 24.

E. Med.—On the rough slope of the down above, and amongst the brushwood on the rocky ground behind, Bonchurch, in several places, 1840. At Ventnor, by the 'Crab and Lobster,' very sparingly, *Dr. Martin !!!* On a heap of stone rubbish a little to the E. below the road near Flint cottage, Ventnor, *Rev. G. E. Smith*. Near Little Duxmore farm, *Mr. Thos. Meehan, jun.*, 1845!! Hedge at Truckles, sparingly, *Dr. Bell-Salter*, 1845!! A plant or two by the roadside between Old Park and Mirables, 1844.

W. Med.—Gravel-pit near Calbourne bottom. Weston farm (a plant or two just within the fence by the roadside!!!). Sconce tower, *Mr. Snooks*.

Root very large, of several thick, fleshy, horizontal fibres. *Stem* 2—4 feet high, hollow, quadrangular, branched and downy like the whole plant. *Leaves* ovato-cordate, on short *petioles*, dull green above, whitish beneath, very soft to the touch, with large, equal, bluntish, tooth-like serratures. *Flowers* white, prettily speckled with pink, in dense shortly stalked clusters from the base of the upper leaves, so closely set as to appear whorled in a spicate form, but the clusters are in pairs only, and not ranged round the stem as in a true whorl. *Calyx* tubular, a little oblique, hairy, with about 15 strong green ribs, its teeth nearly equal. *Corolla* hairy, longer than the calyx, its *throat* suddenly dilated above the very slender contracted *tube*, its *upper lip* in 2 rounded nearly erect lobes, *lower lip* with the 2 smaller or lateral lobes spreading or reflexed, the middle lobe broad, roundish, dotted with purple, its turned-up edges deeply and irregularly notched, hairy within about the throat. *Anthers* rose-coloured. *Style* scarcely as long as the stamens; *stigma* short, notched. *Nuts* rather large, dark brown, roundish oblong or elliptical, subcompressed, flatly and very obtusely triquetrous, minutely roughish or subtubercular, the hilum marked by two snow-white mealy depressions, glabrous except a slight mealiness here and there, chiefly at the base.

The herb has a strong not very pleasant smell, excepting to the feline race, which are said to delight in rubbing themselves against and rolling upon it, to its destruction, in gardens.

2. *N. Glechoma*, Benth. *Ground-ivy*. *Gill Alehoof*. "Procumbent, leaves reniform crenate, whorls axillary stalked unilateral 3—4 flowered, teeth of the calyx ovate mucronate."—*Br. Fl.* p. 320. *Glechoma hederacea*, L.: *E. B.* t. 853.

β. All the stamens reduced to staminodia.

Abundant on hedge- and ditch-banks, in damp gardens, orchards, woods, groves, and other moist shady places. *Fl.* March—May. 24.

β. In moderate abundance in Cow- or Primrose-lane, between Play-street farm and Stone-pits toll-gate, near Ryde, *Dr. Bell-Salter !!*

Tribe VII. STACHYDEÆ, Benth.

"*Stamens* approximating, parallel under the upper lip of the corolla, 2 inferior longest. *Calyx* tubular or bell-shaped, spreading in fruit."—*Bab. Man.*

* *Stamens* longer than the tube of the corolla.

X. LAMIUM, Linn. Dead-nettle.

"*Anthers* approximating in pairs; cells diverging, bursting longitudinally. Upper lip of the corolla arched."—"Calyx bell-shaped, 5-toothed, teeth nearly equal."—*Bab. Man.*

1. *L. amplexicaule*, L. *Great Henbit. Henbit Dead-nettle*. "Leaves orbicular wrinkled inciso-crenate, the floral ones sessile becoming distant by the lengthening of the stem, teeth of the calyx lanceolato-subulate about as long as the tube erect after flowering, tube of the corolla straight naked within, tooth of the lateral lobes of the lower lip obsolete."—*Br. Fl.* p. 318. *E. B. t.* 770.

In waste and cultivated ground, gardens, fallows, about dung-hills, &c.; not uncommon, especially on a sandy soil. *Fl.* whole year, but most perfectly in spring and summer. ☉.

2. *L. purpureum*, L. *Red Dead-nettle. Red Archangel*. "Leaves cordate crenate all stalked, upper ones crowded, teeth of the calyx as long as the tube always spreading, tube of the corolla straight within having a hairy ring, the throat much dilated, lateral lobes of the lower lip with two short teeth."—*Br. Fl.* p. 317. *Sm. E. Fl.* iii. p. 91. *E. B.* xi. t. 769. *Curt. Fl. Lond.* i. fasc. 1, t. 42. *Benth. Lab.* p. 112.

β. Flowers white or nearly so.

In cultivated and waste ground, gardens, fallows, ditch- and hedge-banks, walls, and in grassy places; everywhere abundant. *Fl.* spring—autumn, and partially the year through. ☉.

β. Hedgebank at Fishbourne.

Root of numerous slender pale fibres. *Stem* 6—10 inches high, reclining and usually branched at the base, where it is more slender than towards the summit, and is sometimes procumbent and rooting, hollow, curved, partly purplish, weak and succulent, square, roughish and slightly winged or bordered at the angles, leafless in the middle, with a pair or two of opposite roundish leaves on long hairy footstalks above or below the centre; uppermost leaves crowded, deflexed, broadly cordate, bluntish, unequally crenate (rarely entire), strongly veined and wrinkled, soft and hairy, more or less tinged with purple, the terminal ones very small and pointed. *Flowers* in axillary, many-flowered, sessile whorls, the upper ones closely crowded, the lowermost whorl sometimes a little remote. *Calyx* a little curved, the teeth subulate, fringed, spreading, purplish black along the angles, as are also the corners of the stem between the whorls. *Corolla* rose-coloured, much smaller than in *L. album*; *upper lip* oval, entire or slightly notched, shaggy, deeply coloured, lateral lobes inflated, forming with the throat a sac or pouch, their superior margin reflexed, stained with purple within anteriorly, where they terminate each in a single, sharp, recurved, tooth-like appendage, having another and smaller bluntish one beneath it; *lower lip* in 2 roundish, deeply divided, deflexed or spreading lobes stained with purple in the centre, their margins slightly notched in front; *tube* nearly straight, streaked with purple, as is the throat, and having within a ring of stiff white hairs, pointing a little forwards, inserted between the coloured portion of the tube and its pale annular base. *Stamens* hairy; *anthers* with several tufts of stiff hairs or bristles on the face of each cell, and according to Mr. Leighton accompanied by 6—8 small, white, oval, tuberculate bodies at their base, but of which I can find no trace in my specimens, and presume therefore they are not constantly present; *pollen* bright scarlet, of many oval or elliptical grains.

3. *L. incisum*, Willd. *Cut-leaved Dead-nettle*. "Leaves broadly cordate or deltoid-cuneate deeply inciso-crenate all stalked, the uppermost crowded, teeth of the calyx subulate about as long as the tube always spreading, tube of the corolla straight

naked within, lateral lobes of the lower lip with a short tooth."—*Br. Fl.* p. 317. *E. B. t.* 1933.

In waste and cultivated ground occasionally, but not common, though probably only a variety of the species last described. *Fl.* with L. purpur. ☉.

E. Med.—Amongst turnips in a field at Nettleston green, 1838. About Shanklin in several places, 1843. Fields near Shanklin, *Mr. Wm. Wilson Saunders !!!* [St. Helens spit, *A. G. More, Esq.* Garden-ground at Bembridge, *Dr. Bell-Salter*.—Edrs.]

W. Med.—Hedgebanks in the lane leading from Marvel wood to Whitecroft, in some plenty, 1845. [Near Kingstone, *A. G. More, Esq.*, Edrs.]

I am almost persuaded this is simply a form of *L. purpureum*, as Wahlenberg makes it (*Fl. Suec.*), but in deference to the opinion of such eminent authorities as Smith, Hooker and Benth, who believe these two species to be really distinct, I have refrained from reuniting them.

4. *L. album*, *L. White Dead-nettle. White Archangel.* "Leaves cordato-acuminate deeply serrated stalked, calycine teeth long subulate always spreading, tube of the corolla curved upwards within having a hairy ring, the throat dilated, upper lip oblong, lateral lobes of the lower one with 1—3 long subulate teeth."—*Br. Fl.* p. 317. *E. B. t.* 768. *L. vulgatum*, *Benth. Lab.* p. 514.

On hedgebanks and walls, in waste ground, the grassy borders of fields, and amongst rubbish; not rare, but less frequent and general than the second of our species. *Fl.* April, &c., and partially into autumn. ☉.

E. Med.—At Binstead and elsewhere about Ryde, occasionally. Extremely common about Newchurch, in waste ground and hedgerows. At E. Cowes, at the top of the new plantations.

W. Med.—Plentiful along the hedgebank of the raised causeway betwixt Newport and Carisbrooke, and along the road from Carisbrooke to Shorwell, where I have gathered it with the flowers faintly tinged with red on the back of the upper lip of the corolla. Frequent at Thorley.

Root fibrous, emitting rhizomata in all directions, which again take root at the joints, and send up fresh stems annually. *Stems* from about 6—12 inches high or taller when drawn up in hedges, ascending or even decumbent at the base, afterwards erect, pale green or purplish, quadrangular, the angles slightly bordered, simple or in the larger with a pair or two of opposite branches near the base, harsh with spreading or deflexed hairs, hollow, weak and succulent. *Leaves* pale green, soft and flexible, very like those of the common Nettle in shape, in pairs, opposite, mostly ovato-cordate, but often rounded, truncate or subattenuated at the base, acute or acuminate, strongly and rugosely veined above, paler and prominently netted beneath, roughish on both sides with short, erect, simple and jointed hairs, deeply and unequally incised-dentato-serrate, the serratures rounded, acute or even incurved; lower leaves distant, on long, channelled, hairy petioles, smaller than the upper leaves or those accompanying the whorls, and which are on much shorter, more dilated, fringed petioles; the highest leaves again diminishing in size, almost sessile. *Verticillasters* of several closely sessile flowers, the exterior blossoms of each semiwhorl with 2 or 3 small bracts at their base, that are shorter than the calyx. *Calyx* tubular, campanulate, prominently 10-ribbed, a little compressed laterally, pale green dotted and blotched with brownish purple, that extends to the adjacent portion of the stem and petioles; the limb in 5 triangular segments, acuminate into as many long, weak, subulate, oblique points of nearly equal length; superior segment suberect, very widely separated from the 2 exterior, which approximate to and project parallel with the inferior pair. *Corolla* nearly an inch long, curved somewhat like a long *f*, milk-white with a faint tinge of yellow and some dots and streaks of pale olive-green on the central lobe of the lower lip and at the base of the latter just within the throat; *upper lip* of corolla large, obovate, vaulted, much narrowed behind, traversed by

a bifid or trifid prominent ridge or keel, the forks of which terminate in the irregularly crenate anterior margin, very downy with long white hairs externally, glabrous within; *lower lip* glabrous, the lateral lobes minute, almost merged in the inflexed throat, their superior horizontal margins a little folded down or reflexed, and terminating anteriorly in a blunt angle, below which is a subulate tooth or process, the margin continuing downwards in a vertical direction to the base of the anterior lobe, obscurely dentato-crenate; central or anterior lobe roundish obcordate or nearly circular, deeply emarginate, strongly and irregularly crenate in front; all the lobes more or less reflexed, and suddenly contracted behind into a short neck or claw; *tube* scarcely a line in length, its mouth closed with a ring of white hairs; *throat* dilated, with a membranaceous sac-like gibbosity underneath, running back to the orifice of the tube, and rounded at the apex or somewhat spurred. *Stamens* unequal; *filaments* white, downy, partly with soft and weak, partly with stiff glandular hairs; *anthers* not cohering in pairs, black, strongly bearded at the back with long white hairs; *pollen* greenish yellow, grains oval: I do not find the small tubercular bodies at the base of the anthers mentioned by Leighton. *Style* as long as the stamens, very slender, slightly enlarged upwards, bifid at the summit, the forks equal, divaricate.

With a wide distribution, *L. album* is yet a somewhat local species, nor is it by any means universally diffused over the Isle of Wight. At Great Yarmouth, as I learn from Mr. Dawson Turner, it is amongst the rarest plants.

5. *L. Galeobdolon*, Crantz. *Yellow Archangel*. *Yellow Weasel-snout*. "Lateral lobes of the lower lip of the corolla oblong acute."—*Br. Fl.* p. 316. *Benth. Lab.* p. 516. *Galeobdolon luteum*, *Huds.*: *E. B. t.* 787.

In moist shady places, woods, groves and under hedges; plentifully in various parts of the island. *Fl.* April—June. 24.

E. Med.—Abundant in Great wood, Luccombe copse, and other woods near Shanklin, also in the chine. At Apse castle, and about Appuldurcombe, frequent. Steephill and other parts of the Undercliff. About Cowes, in Shambler's copse, in Barton copse, between Norris castle and King's quay. Near Mirables, *Mr. Fred. Russell* in With.

W. Med.—Bottomground copse, near Newport.

Root fleshy or somewhat tuberous at the crown, often a little creeping, with copious long, pale, branched fibres, emitting barren shoots procumbent and rooting at the joints. *Stems* several, from about 12 to 20 inches high, flexuose or ascending at the base, then erect, simple, quadrangular, hollow in the centre, purplish and hispid in their lowest part with white, stiff, mostly deflexed hairs, greenish and comparatively glabrous for $\frac{2}{3}$ ds of their length, the barren shoots hairy throughout. *Leaves* opposite, stalked, bright green, sometimes spotted with white or purplish beneath, the lower pair or two smaller and more distant, as well as on longer stalks and without flowers in their axils; ovate or as they ascend becoming ovato-lanceolate, acute, strongly depresso-venose, rounded or subcordate at the base, coarsely, deeply and unequally inciso-serrate, the serratures rounded or acute, with glandular tips, flexible and soft with erect scattered pubescence, more copious on the under surface, which is reticulated with prominent veins. *Petioles* hairy, caniculate and dilated downwards, gradually shortening and widening as they ascend, the uppermost scarcely a line in length, of the lowermost leaves often an inch or more. *Whorls* axillary, of about 6 to 10 sessile flowers the size of those of *Lamium album*, the exterior ones with a linear, ciliated, mucronulate bract at the base of each, shorter than the calyx, of which those behind them are destitute. *Calyx* green, tubuloso-campanulate, pubescent, with about 5 principal and as many secondary ribs; teeth 5, triangular, with fine subulate points, the 4 inferior ones nearly equal, spreading or even a little recurved, the inferior one larger, erect and remote. *Corolla* 2-lipped; *upper lip* very large, obovate, vaulted, downy, minutely and unevenly waved or crenulate along the edges but not emarginate, finely fringed, pale yellow; *lower lip* trifid, golden yellow.

low, variegated with tawny or fulvous streaks and dots, with which the margin of the upper lip is sometimes besprinkled within, 2 lateral lobes roundish ovate, acuminate in front but without lateral teeth, middle lobe linear-oblong, tipped with a small point, entire, much longer than the lateral lobes; tube very short, reddish and glabrous, closed at its junction with the throat of the corolla by an oblique ring of white hairs. Filaments white, downy; anthers with purplish edges. Style reddish, filiform, slightly enlarged upwards, bifid at the summit, the segments spreading, acute, the lower one longest.

XI. GALEOPSIS, Linn. Hemp-nettle.

"Calyx campanulate, equal, 5-toothed, teeth mucronate. Corolla with the tube exerted, the throat inflated: upper lip arched; lower one with 3 unequal lobes, having two teeth on its upper side. The two anterior stamens the longest. Anther-cells opposite, bursting transversely, 2-valved. Achenes rounded at the end."—Br. Fl.

1. *G. Ladanum*, L. Red Hemp-nettle. "Stem softly pubescent with deflexed hairs or glabrous not swollen below the joints, leaves lanceolate subserrate downy on both sides, calyx having sometimes a few glands, upper lip of the corolla slightly notched."—Br. Fl. p. 315. E. B. t. 884.

Abundant in dry gravelly or chalky cornfields, fallows, waste ground, and on chalk or limestone rubble, in various parts of the island; also on ditchbanks, dry stony hills and grassy borders of fields, thickets, &c.; occasionally. Fl. July—October. ☉.

E. Med.—Abundant in many places along the Undercliff, as in the cornfields above Bonchurch, St. Lawrence, &c. About Ashe, in fields above Eagle-head copse. New Fairlee farm. At Beaper farm, near Brading, 1848. Fields near Bembridge down, Mr. Saunders.

W. Med.—Cornfields about Yarmouth and the Needles hotel. Ningwood and elsewhere between Yarmouth and Newport. Rowledge. Field above North Court, abundantly, 1842. Between Apes Down and Rowledge, 1843.

Achenia grayish brown, obovate, rounded at the back and summit, subtriquetrous, shining and glabrous.

2. *G. Tetrahit*, L. Common Hemp-nettle. "Stem hispid swollen below the joints, leaves oblong-ovate acuminate hispid serrated, calyx-teeth twice as long as the tube, corolla with the tube as long as the calyx, upper lip erect ovate."—Br. Fl. p. 316. E. B. t. 207.

β. Flowers white.

In cultivated ground, amongst corn, &c., in waste places, moist woods, thickets, hedges and about ditches; abundantly. Fl. July—September. ☉.

β. Lower Knighton, near the mill.

XII. STACHYS, Linn. Woundwort.

"Calyx tubular, bell-shaped, with 5 equal teeth." "Upper lip of the corolla concave, lower of 3 unequal lobes." "Anthers approaching in pairs; cells diverging, bursting longitudinally." "Nuts obtuse, and convex at the end."—Bab. Man.

1. *S. Betonica*, Benth. *Betony*. "Hairy, spike interrupted short, leaves cordato-oblong crenate, corolla twice as long as the calyx, stem naked, middle lobe of the lower lip somewhat notched."—*Br. Fl.* p. 318. *Betonica officinalis*, *E. B.* t. 1142.

In woods, groves, thickets, and in dry open sandy or heathy pastures; very common. *Fl.* June—August. 24.

2. *S. sylvatica*, L. *Hedge Woundwort*. "Whorls of 6—8 flowers distant, bractæ minute, calyx-teeth very minute, leaves cordato-ovate acute serrate long-stalked, upper floral ones linear entire."—*Br. Fl.* p. 319. *E. B.* t. 416.

In damp shady situations, woods, thickets and hedges, on ditchbanks, by stream-sides and in waste weedy places; abundantly. *Fl.* July, August. 24.

Achenia roundish ovate, bluntly triquetrous, black and shining, pale at the base, shagreened and subtuberculate, inserted on a concave receptacle, with a lobed or notched basin-like rim or border.

3. *S. palustris*, L. *Marsh Woundwort*. "Whorls of 6—10 flowers, bractæ minute, calyx-teeth very acute, leaves linear-lanceolate or ovato-lanceolate rounded or cordate at the base sessile or stalked.

"*a.* Lower leaves shortly stalked, upper sessile and semiamplexicaul. *E. B.* t. 1675.

"*β. ambigua*. Leaves distinctly stalked, stalks not above half the length of the leaf. *S. ambigua*, Sm.: *E. B.* t. 2089."—*Br. Fl.* p. 319.

"*γ.* Leaves shortly stalked.

In wet marshy places, boggy thickets, by river- and ditch-banks, also in moist arable land; very common. *Fl.* July, August. 24.

"*δ.* By the side of a new road between Sea View and Ryde, *Albert Hambrough, Esq.*

"*γ.* Fields at Lower Morton, by Sandown. Near Shanklin, *Miss E. Kirkpatrick*. [On Gallibury down, by the side of the cross-road towards Roughborough, *Dr. Bell-Salter, Edrs.*]

The roots of *S. palustris* are said to become edible by cultivation. See Curtis, *Brit. Entom.* vi.

4. *S. arvensis*, L. *Corn Woundwort*. "Annual, whorls of 4—6 flowers, stem decumbent or ascending, leaves cordato-ovate obtuse crenate slightly hairy stalked, floral ones ovato-oblong sessile acute, teeth of the calyx lanceolate aristate, corolla scarcely longer than the calyx."—*Br. Fl.* p. 319. *E. B.* t. 1154.

In waste and cultivated ground, fallows and dry open fields; not unfrequent. *Fl.* April—November. ☉.

E. Med.—Between Quarr abbey and Fishbourne. Nettlesgreen. Abundantly on the waste building-lots at E. Cowes park, 1846. [Extremely common in gardens and ploughed fields at Bembridge, especially near the cliff, *Dr. Bell-Salter, Edrs.*]

W. Med.—Common in fields about Gurnet farm, amongst turnips, potatoes, &c. About Pallance.

XIII. *BALLOTA*, Linn.

"*Calyx* salver-shaped, equal, with 10 ribs and 5 broad mucronated teeth, naked within. *Corolla* with the *tube* included: upper *lip* erect, concave; lower one trifid, middle lobe the largest, emarginate. The two anterior *stamens* the longest. *Cells* of the *anthers* diverging, opening longitudinally. *Achenes* rounded at the end."—*Br. Fl.*

1. *B. nigra*, L. *Black Horehound. Stinking Horehound.* "Leaves ovate crenato-serrate, bractæas linear-subulate, teeth of the calyx shortly acuminate patent longer than the tube of the corolla."—*Br. Fl.* p. 314. *E. B.* t. 46.

β. Flowers white.

In dry waste places, borders of woods and fields, amongst rubbish and on hedgebanks, everywhere; most plentiful in general on approaching towns and villages. *Fl.* June—October. 24.

β. At St. Lawrence. By the roadside immediately opposite Rew farm, near Ventnor. Lane near Merston. Between Freshwater gate and Farringford hill, *Mr. Snooke*. In a field between Idlecumbe farm and Bottomground, Rew, in moderate quantity, and growing with the common purple form.

The plant at Rew is *B. fetida*, Lam., having very broad, shortly acuminate and recurved calyx-teeth. That at St. Lawrence is *B. ruderalis*, Fries, with longer, narrower calyx "gracefully dilated upwards," the teeth ovato-lanceolate, tapering into long points and erecto-patent. But, as Mr. Bentham observes, "the form of the calyx is so uncertain within the above-mentioned limits, that I cannot distinguish between the three plants figured as species by Reichenbach," a remark to the correctness of which my own repeated observations on our native species enable me to bear testimony.

The barren stems of *Ballota* remain green through the winter.

** *Stamens* included in the tube of the corolla.

XIV. *MARRUBIUM*, Linn. *Horehound.*

"*Calyx* with 10 ribs and 5 or 10 spreading teeth, the throat hairy. *Corolla* with the *tube* exerted: upper *lip* erect; lower one 3-lobed, middle lobe the largest, emarginate. The two anterior *stamens* the longest. *Achenes* flatly truncated at the end."—*Br. Fl.*

1. *M. vulgare*, L. *Common or White Horehound.* "Everywhere hoary with a white thick pubescence or woolliness, stem erect, leaves roundish ovate toothed or crenate wrinkled, calyx with 10 setaceous hooked teeth, upper lip of the corolla oblong bifid."—*Br. Fl.* p. 321. *E. B.* t. 410.

In dry waste places, pastures, by roadsides and about villages, but rare in the lower and more level parts; far more abundant on the high chalk-downs, and usually along the earthen or stone fences that traverse them. *Fl.* June—September. 24.

E. Med.—At Bonchurch. Compton farm, Sandown, *Mr. Snooke*. [Bembridge down, *A. G. More, Esq.*, Edrs.]

W. Med.—Frequent on many parts of Afton down and other places about Freshwater. On the slope of the down a little above Brook church, in plenty, 1845.

About Brixton, Brooke, &c. Abundant on all the downs west of Calbourne; Colwell: *Mr. Snooke*.

Achenia small, blackish brown, obovato-oblong, rounded at the back, cuneate in front, scabrous and tubercular.

Tribe VIII. *AJUGOIDEÆ*, *Benth.*

"*Corolla with the upper lip very short, or split, deeply bifid and appearing as if wanting.*"—*Bab. Man.*

XV. *TEUCRIUM*, *Linn.* Wood Sage.

"*Calyx* tubular, 5-toothed, nearly equal or 2-lipped. *Corolla* with the upper lip bipartite; lower one patent, trifid. *Stamens* much exserted. *Cells* of the *anthers* confluent, spreading."—*Br. Fl.*

1. *T. Scorodonia*, *L.* *Wood Sage*. "Leaves oblong-ovate cordate at the base petiolate downy crenate green on both sides, floral ones small about the length of the pedicels, flowers in lateral and terminal 1-sided racemes, calyx sub-bilabiate, upper lip ovate entire, lower 4-toothed, tube of the corolla exserted, stem erect."—*Br. Fl.* p. 312. *E. B. t.* 1543.

In dry woods, thickets, hedges and rough, stony, bushy or heathy places; plentiful in most parts of the island. *Fl.* July, August. 24.

Achenia small, blackish brown, ovato-rotund, scarcely triquetrous, scabrospunctate, glabrous.

? 2. *T. Chamædrys*, *L.* *Wall Germander*. "Leaves ovate incisio-serrate wedge-shaped and entire at the base green on both sides, floral leaves smaller nearly entire, whorls of 2—6 flowers, upper ones racemose, calyces declinate campanulate, their teeth lanceolato-acuminate nearly equal, flowers axillary, stem ascending."—*Br. Fl.* p. 313. *E. B. t.* 680.

On old walls, rocks and ruins, the borders of fields, and in rough, stony, hilly places; very rare, and now apparently extinct in its only recorded station in this island. *Fl.* July—September. 24.

Carisbrooke castle (*Pulteney*), *Bot. Guide*. In the area of Carisbrooke castle, *Dr. Stokes* in *With*.

I have repeatedly searched for this plant in vain at Carisbrooke castle, and my friend N. B. Ward, Esq., the ingenious inventor of the now well-known method of growing plants in almost air-tight cases, was equally unsuccessful in his endeavours at finding it many years ago.

XVI. *AJUGA*, *Linn.* Bugle.

"*Calyx* ovate, nearly equal, 5-cleft. *Corolla* with the tube exserted: upper lip short, erect, entire or emarginate; lower one larger, patent, trifid. *Stamens* 4, ascending, protruded above the upper lip; cells of the *anthers* diverging or divaricate, at length confluent."—*Br. Fl.*

1. *A. reptans*, *L.* *Common Bugle*. "Glabrous or downy, stem

solitary with creeping scions, leaves ovate or obovate sinuate or quite entire."—*Br. Fl.* p. 313. *E. B.* t. 489.

β. Flowers pure white.

γ. Flowers light purple or pink.

In moist woods, thickets, pastures and shady places; abundantly.

β. In the wood adjoining Calbourne New Barn, not unfrequent. Near Ryde.

"Abounds in the Isle of Wight," *Smith*.

γ. In Quarr copse. Apley wood.

Order LVIII. VERBENACEÆ, *Juss.*

"*Calyx* tubular or campanulate, persistent. *Corolla* monopetalous; *tube* elongated; *limb* irregular, 4—5 lobed. *Stamens* 4, didynamous, or 2; *anthers* 2-celled. *Ovary* 2—4 celled, 2—4 seeded. *Style* 1, terminal. *Stigma* bifid or entire. *Capsule* separating at length into 4 *achenes*, or indehiscent, or a berry with 1—4 *nucules*. *Albumen* none. *Radicle* inferior. — Trees or shrubs, or herbaceous plants. Leaves generally opposite."—*Br. Fl.*

I. VERBENA, *Linn.* Vervain.

"*Calyx* tubular, with 5 teeth, one of them usually shorter than the rest. *Corolla* tubular, with the *limb* rather unequal, 5-cleft. *Stamens* included (very rarely only 2). *Ovary* 4-celled; *cells* 1-seeded. *Capsule* dividing into four 1-seeded *achenes*."—*Br. Fl.*

1. *V. officinalis*, *L.* Common Vervain. *Simpler's Joy*. "Stamens 4, stem 4-angled erect somewhat hispid, leaves rough especially beneath shining above lanceolate inciso-serrate or trifid with the segments cut, spikes filiform somewhat paniced, flowers rather remote, bractees ovate acuminate about half the length of the calyx."—*Br. Fl.* p. 325. *E. B.* t. 767.

On dry banks, in churchyards, along hedges, roadsides and waste ground; common, and chiefly near inhabited places; more rarely in woods and pastures remote from habitations. *Fl.* July—September. *Fr.* September? October. 24.

E. Med. — In Binstead stone-pits, and elsewhere about Ryde occasionally. Very common at Bonchurch, Ventnor, St. Lawrence, and along the Undercliff generally. Farm-yard at the Priory. Nunwell farm. Common at the W. end of Shepherd's lane, by Hasely farm, and about the farm itself, 1844.

W. Med. — In very sequestered copsewood at the upper end of the valley at Apes Down, 1845. Woods at Swainston. Extremely frequent about Yarmouth, Thorley and Calbourne. Abundant about Freshwater, in the direction of Alum bay, as on Pound green. Brixton churchyard.

? 2. *Ajuga Chamæpitys*.

In dry, sandy, gravelly fields over chalk.

A dubious inhabitant of the Isle of Wight, reported to me as growing in fields about Week farm, near Niton, along with *Melampyrum arvense*, but, though a very likely station to produce it, this species has never occurred to my observation there or elsewhere in the island.

Seeds 4, reddish brown, oblong and slightly conical, truncate, convex at the back, with several very prominent ridges that unite into coarse reticulations at the summit, the two inner faces plane and thickly covered with white oblong granulations.

Order LIX. LENTIBULARIACEÆ, Rich.

"*Calyx* divided. *Corolla* irregular, 2-lipped, with a spur. *Stamens* 2, from the base of the corolla. *Anthers* 1-celled. *Ovary* 1-celled. *Style* usually wanting or very short (rarely filiform). *Stigma* of 2 plates, upper one smaller, sometimes obsolete. *Capsule* with a large central *placenta*, bearing many *seeds*, which are very minute, without *albumen*.—*Small*, herbaceous, *marsh* plants, with leaves all radical and undivided; or aquatic plants with compound root-like leaves bearing bladders."—*Br. Fl.*

I. PINGUICULA, Linn. Butterwort.

"*Calyx* 2-lipped, upper lip of 3, lower lip of 1, bifid segments. *Corolla* ringent. *Stigma* sessile. *Capsule* with 2 lateral valves."—*Br. Fl.*

1. *P. lusitanica*, L. *Pale Butterwort*. "Spur cylindrical obtuse decurved shorter than the almost equal limb of the corolla, leaves membranous veined and as well as the scape hairy, capsule globose."—*Br. Fl.* p. 326. *Sm. E. Fl.* i. p. 28. *E. B.* iii. t. 145 (optima!) *Brot. Lusit.* i. p. 15.

In spongy bogs and moist heathy places in W. Medina; rare; probably attaining here its eastern limit. *Fl.* June—October. ☿ or ⊙?

Plentiful on a piece of boggy ground called Little Moor, just below Cockleton farm, near W. Cowes, *Miss G. Kilderbee*, July, 1839!!! who was the first to discover it in this island. On the heath at Colwell, sparingly.

The least conspicuous for size and beauty of all the British species, quite confined to the most westerly and maritime coasts of Europe, from Portugal to the extreme N. of Scotland.

From 2—4 inches high. *Root* of a few vertical fibres, and I suspect annual, as Brotero makes it. *Leaves* all radical, spreading in a circular tuft, broadly ovate, obtuse, slightly notched at their extremity, much rolled inwards at the edges, of a pale faded green with dark veins, their texture thin, membranous and easily torn (not thick and succulent as in *P. vulgaris*, though having the same greasy look and feel), a little hairy towards the base. *Scapes* solitary or several, erect, rounded and hairy. *Flower* solitary and terminal, very pale blue or lilac; the throat yellowish, veined and dashed with reddish brown; lobes of the *calyx* obtuse, nearly equal. Limb of the *corolla* in 5 nearly equal, rounded, emarginate lobes, clothed on the inner surface with gland-tipped hairs; *spur* short, deflexed, obtuse and thickened at the end. *Stamens* curved, their 2 single-celled *anthers* standing close beneath the bilobate stigma, and discharging the *pollen* on its under surface. *Ovary* (germen) globose. *Capsule* membranous, truly globular, a little hairy, crowned with the persistent stigma. *Seeds* numerous, extremely minute, brown and pellucid, of an oblong figure, mostly truncate at one end, and, as it appears to me, invested with a loose beautifully reticulated tunic.

The leaves of this and other species of *Pinguicula* curve backwards very soon after being gathered, quite concealing the root, and much injuring the natural appearance of the plant in the herbarium.

II. UTRICULARIA, Linn. Bladderwort.

"*Calyx* bipartite, upper lobe entire, lower often notched or 2-toothed. *Corolla* personate. *Style* 0 (or filiform and persistent). *Stigma* 2-lipped."—*Br. Fl.*

1. *U. vulgaris*, L. *Common or Greater Bladderwort. Hooded Milfoil.* "Spur conical straight obtuse about half the length of the corolla, the upper lip of which is as long as the projecting palate, sides of the lower lip recurved, leaves pinnato-multifid remotely spinulose, vesicles attached to the leaves."—*Br. Fl.* p. 327. *E. B. t.* 253.

In ponds, ditches and drains; rare. *Fl.* June, July. 24.

W. Med.—In several of the drains and ditches in the marsh at Freshwater Gate, but never seen by me in flower. Ditches in the marsh at Easton, plentifully, *Fl. Vect. !!!*

I have observed that the stems float about in the water unconnected by any root or visible means of communication with the soil, a fact since confirmed by the Rev. W. H. Coleman, who supposes that the extremities of the branches detach themselves in early spring, and continue increasing in length through the summer, as they are at first not above an inch or two in length and without bladders.

2. *U. minor*, L. *Lesser Bladderwort.* "Spur obtuse keeled deflexed much shorter than the corolla, the upper lip of which is notched and as long as the palate, lower lip obovate nearly flat, leaves subtripartite, the segments linear dichotomous glabrous, vesicles attached chiefly to the leaves."—*Br. Fl.* p. 327. *E. B. t.* 254.

In boggy or marshy pools, ditches and drains; very rare. *Fl.* July—September. 24.

E. Med.—Abundantly in a ditch in the meadows immediately below the farm at Langbridge, by Newchurch, but flowering very sparingly, *Mr. Jacobs*, 1842.

Order LX. PRIMULACEÆ, Vent.

"*Calyx* 4—7 cleft (half superior in *Samolus*). *Corolla* regular, 4—7 lobed, inferior (wanting in *Glaux*). *Stamens* as many as and alternate with the sepals, opposite to the lobes of the corolla. *Ovary* 1-celled, with the *ovules* upon a large free central *placenta*. *Style* 1. *Stigma* capitate. *Fruit* a capsule. *Seeds* usually peltate. *Embryo* usually transverse (parallel to the *hilum*); very rarely (in *Hottonia*) erect, with the *radicle* close to the *hilum*.—Herbaceous plants, chiefly of the colder and temperate regions.

I. PRIMULA, Linn. Primrose.

"*Calyx* tubular or campanulate, 5-toothed. *Corolla* salver-shaped, its *tube* cylindrical, its mouth open. *Capsule* opening with 10 teeth."—*Br. Fl.*

"Welcome, pale Primrose! starting up between
 Dead matted leaves of Ash and Oak, that strew
 The every lawn, the wood, and spinney through,
 'Mid creeping moss and Ivy's darker green;
 How much thy presence beautifies the ground;
 How sweet thy modest, unaffected pride
 Glows on the sunny bank and wood's warm side.
 And where thy fairy flowers in groups are found
 The schoolboy roams enchantedly along,
 Plucking the fairest with a rude delight:
 While the meek shepherd stops his simple song,
 To gaze a moment on the pleasing sight;
 O'erjoy'd to see the flowers that truly bring
 The welcome news of sweet returning spring."
Clare.

—————"Pale Primroses
 That die unmarried, ere they can behold
 Bright Phœbus in his strength."

Winter's Tale.

1. *P. vulgaris*, Huds. *Common Primrose*. "Leaves oblong-ovate crenate toothed wrinkled, scape umbellate usually sessile sometimes on a common stalk, flowers erect, calyx tubular somewhat inflated, teeth linear-lanceolate attenuated very acute, limb of the corolla flat, tube with a circle of scale-like folds at the slightly contracted mouth."—*Br. Fl.* p. 329. *E. B. t.* 4.

β. Flowers pure white, with a yellow eye.

γ. Flowers bright purplish red.

δ. *caulescens*. Scape umbellate, flowers deeper yellow.

ε. Flowers double.

In woods, thickets and groves, on banks, under hedges and about the borders of fields, also in open meadows and pastures; most abundantly. *Fl.* March—June. 24.

β. About Ryde, occasionally, as solitary specimens. Whitefield wood, and I think also in Quarr copse. Symington copse, between Somerford and Medham farms, in one spot abundantly. Near Landguard farm, the *Miss Herons*!! Very fine and plentiful in a copse near the Medina, by N. Fairlee, *G. Kirkpatrick, Esq.*

γ. Wood between Steephill and St. Lawrence, *Albert Hambrough, Esq.!!!* Abundant on banks in the grounds at Montpellier house (now an hotel), Ventnor, but probably disseminated from roots originally planted, the variety being frequent in gardens. In the former station this beautiful variety is truly wild, and growing in a clump of considerable extent. Field by Morton house, *Dr. Bell-Salter* (wild?). [Banks in several places in St. Helens parish, truly wild, *Dr. Bell-Salter, Edrs.*]

δ. In copses occasionally. In a copse betwixt Shanklin and Bonchurch I found, April, 1849, two roots of this variety. The copse was full of Primroses, but not a single Cowslip was to be found in or near the spot; the leaves were truly those of the Primrose, and, excepting in the umbellate flowers and their somewhat deeper colour, the plants differed in nothing from the ordinary Primroses which grew around them. In March, 1842, I found a variety of the Primrose, in a wood between St. Lawrence and Niton, with the usual stemless flowers, but the latter were slightly concave and more deeply coloured than usual, betraying the first approach to the Oxlip or intermediate state between the Primrose and Cowslip. [Field under Bembridge down, *A. G. More, Esq., Edrs.*]

[In the wet wood by Lane-end, Bembridge, truly wild, *Miss Caroline Bomford, Edrs.*]

Root very thick and fleshy, knotty, somewhat creeping, emitting numerous

long, stout, pale, nearly simple fibres. *Stem* none, or rarely produced as in δ . *Leaves* all radical, tufted, the outermost spreading or lying flat, obovate or obovato-oblong, from 5 or 6 to 10 or 12 inches long including the petiole, and from 2 to $3\frac{1}{4}$ inches broad, pale dull green, slightly glaucous, very obtuse, strongly and rugosely veined above and glabrous or very slightly pubescent only, their margins waved and more or less reflexed, coarsely, unequally and erosely denticulate, and subsinuately notched or serrated and crisped; beneath paler, rugose, finely downy and almost woolly along the copious prominent anastomosing branches, from the very stout, brittle, acute midrib, which is dilated downwards, purplish and membranously winged at the base forming the petiole, in which the leaf tapers without any contraction as in the Cowslip. *Stipules* none. *Scapes* numerous, cylindrical, lax, prostrate in seed, purplish and woolly, about as long as the leaves, single-flowered and mostly quite radical, but springing from a common centre of the crown or caudex, from which they are occasionally raised on a single peduncle in an umbellate form, as in var. δ . and the Polyanthus of the gardens, which is a cultivated variety of the common Primrose. *Bracts* solitary at the base of each scape, linear-subulate or linear-lanceolate, keeled, green, pale. *Calyx* erect, pale green, very hairy, ovato-elliptical, scarcely ventricose, narrowed above, with 5 deep, acute, angle-like plaits, terminating in as many narrow, lanceolate, very acute segments, into which the calyx is cleft for above $\frac{1}{3}$ rd of its length, and which equal or even a little exceed the tube of the corolla in length. *Corolla* large, from 1 to $1\frac{1}{4}$ ths inch in diameter, slightly downy, pale sulphur-yellow, sometimes white or purplish red, the *limb* plane, cleft almost to the nearly cylindrical somewhat angularly ribbed tube into 5 roundish obcordate, deeply emarginate, sometimes almost bifid segments, each with a dull orange ovate spot at the base, which is traversed along the line of the median nerve by a fulvous and often obsolete streak; *tube* thin and membranaceous in its lower part, enlarged, funnel-shaped and thickened at top, where it is slightly downy and transversely wrinkled inside, contracted within or at the mouth by a degree of puckering which puts on more or less the appearance of a slight crown or border often indistinct or wholly wanting. *Stamens* inserted either a little below the summit of the tube on short *filaments* and connivent, or placed about the middle of the tube sessile and erect; *anthers* narrow-oblong, yellow. *Germen* globose obconic, many-ribbed, pellucid and glabrous. *Style* slender, cylindrical, sometimes enlarged in the lower half, glabrous, much shorter than the tube when the stamens have their higher insertion concealed by them; about equal to the tube when the stamens are placed lower, and then visible above the latter; *stigma* capitato-globose, piloso-glandulose. *Capsule* shorter than the closely investing calyx, ovoid-oblong, conical at top, white and membranous like tissue paper, glabrous, faintly many- (usually about 10-) ribbed, tipped with the style, opening by several (10 or more) revolute or recurved teeth. *Seeds* numerous, rather large, yellowish or reddish brown, somewhat hemispherical, bluntly angular, furfuraceous, scabrous, at length darker and dimpled.

Under cultivation, and occasionally in the wild state, the Primrose sends up a single erect stem, various in height, bearing an umbel of reddish- or brown-edged often richly coloured flowers, the well-known Polyanthus of our borders, with all its beautiful but endless varieties. The blossoms of the wild Polyanthus Primrose are usually liver-coloured, as we see they become in poor or neglected garden soil; I have gathered this form near Hastings, but have never met with it in the Isle of Wight myself, though it has occurred to Mr. Albert Hambrough. The flowers of this, as well as of the next, often turn wholly or partially green in drying.

2. *P. veris*, L. *Cowslip* Paigle. "Leaves ovate crenate toothed wrinkled contracted below the middle, scape umbellate, flowers drooping, calyx tubular campanulate, teeth short ovate, limb of the corolla concave, tube with a circle of scale-like folds at the slightly contracted mouth."—*Br. Fl.* p. 330. *E. B.* t. 5.

* * * * "Cowslips of gold bloom,
That in the pasture and the meadow come,
Shall come when kings and empires fade and die;
And in the closes, as Time's partners, lie
As fresh two thousand years to come as now,
With those five crimson spots upon their brow."
Clare's Rural Muse.—The Eternity of Nature.

β. elatior, Linn. *P. elatior*,* *With.* (not *Jacq.*) Limb of the corolla flat.

* The true *P. elatior*, *Jacq.* (and *Linn.*²), first formally brought before the notice of British botanists in 1842, by Mr. H. Doubleday, who discovered it in wet meadows at Bardfield, Essex, and published it in the 'Phytologist' (vol. i. p. 204) as probably the genuine plant of that name of the German botanists, has certainly much the air of a distinct species; yet do the observations of Mr. H. C. Watson (*Phytol.* i. p. 1001) tend to throw doubt on the fact of its distinctness, he having "seen exceptional instances to all the characters (taken singly) by which this plant is distinguished from the other two species in Babington's Manual; the specific characters drawn out by that author being quite accurate but not invariably applicable." Mr. Watson has however added a character which he thinks of apparently greater permanency, namely, the absence of any "scale-like gland" at the orifice of the tube of the corolla, though anything deserving of that name I am unable to perceive in either the Primrose or Cowslip, beyond a degree of puckering at the margin of the tube, which puts on more or less the appearance of a slight crown or border, often very indistinct or wholly wanting.

The Bardfield *O. elatior* is admirably represented in *E. B.* vol. xiii. t. 513, doubtless from Essex or at least eastern-county specimens, as they were communicated to Sowerby by the Rev. Mr. Hempstead, who I believe resided in Essex. The leaves of the Bardfield Oxlip exactly resemble in general those of the Cowslip, but in many of the fresh specimens before me they are as much like those of the Primrose, and taper as they do gradually into the footstalk without any contraction or abruptness whatever, which is sometimes seen in the Cowslip. The calyx in most of my specimens is close, narrow and nearly cylindrical or tubular, being but slightly ventricose or inflated, a little shorter than the tube of the corolla, acutely 5-ribbed and angled, the teeth shortish and mostly acuminate, broader in proportion than those of the Primrose, but in some of the specimens the calyx makes a considerable approach to that of the Primrose in becoming ovoid and somewhat ventricose. The throat of the corolla is remarkably open, and free from those plaits or puckers usually so conspicuous in the Primrose, being in fact funnel-shaped both within and without. The limb of the corolla is sometimes flat, more usually cup- or funnel-shaped (another point of resemblance to the Cowslip), but in colour is intermediate betwixt that and the Primrose, as we usually see it in our commonly so-called oxlips. The flowers are pleasantly but not powerfully scented, and are drooping (at least the outer ones) as in the Cowslip; the corolla has much more the form of the Primrose than of the Cowslip, but is hardly more than half the size of the former, and the segments are less rounded or more abrupt, and do not overlies each other, but are separated by an evident space their entire length in most instances, an appearance which the umbellate var. of *P. vulgaris* also puts on. The scapes vary much in hairiness, but in general are very densely clothed with woolly pubescence. In the length of the style and position of the stamens it varies like the rest of the genus. Gaudin (*Fl. Helv.* ii. p. 84) remarks of our *P. elatior*, "*Priori (P. vulgaris) utraque nimis affinis, ut in speciminibus quibusdam characteres diagnostici fere omnino evanescent.*" He might have added that it comes as near to *P. veris* as to *P. vulgaris*, and is nearly as exactly intermediate betwixt them as are many of our false oxlips. The same acute botanist notices the extremely acute calyx-segments of *P. elatior*, "*calyce acutissimo,*" as part of his specific character. The only tolerably certain figure of *P. elatior* I can find in the works of the older botanists is that of Clusius, *Rar.*

Less general than the last, and in usually drier more exposed places, as meadows, pastures, open groves, on chalky slopes, high downs, heaths, &c. *Fl.* April, May. 2l.

E. Med.—Rarely seen about Ryde, in fields near Quarr abbey and the Spencer road, sparingly. Frequent about Brading and Yaverland. Common along Undercliff, at East-end, Bonchurch, Steephill, &c. Newchurch. Fields about Nunwell, in plenty. At the foot of Messley down, by Knighton West copse, &c. Bloodstone copse, near Ashey, 1849.

W. Med.—Carisbrooke-castle walls, and on the glacis, &c. Plentiful between Newport and Shorwell, in copses and open fields, as about Idlecumbe, Buccombe, &c. Everywhere about Thorley, with β . Plentiful on the slope of Gatcombe and Chillerton downs, at the back of Tolt copse; about New Barn, in the long and short coppices; &c.—1845. In Lorden copse, and generally dispersed on and at the base of the central chalk range. Swainston, in profusion, *Lady Simeon*.

β . Not uncommon intermixed with α , into which it may be seen so insensibly passing, that many individuals appear exactly intermediate between both varieties. Near Brading, and in various places between Newport and Shorwell. Steephill, not unfrequent. Very common in meadows about Thorley. Meadow betwixt Nunwell new farm and the down, frequent, *Dr. Bell-Salter*: on visiting the place with Dr. S., May 14th, 1849, not a single Oxlip could be found amongst thousands of Cowslips. At Swainston, *Lady Simeon*. Occasionally found in copses and meadows, with the common Primrose, where a Cowslip does not grow within miles of the place.

Root as in the Primrose, but smaller and scarcely at all inclined to extend horizontally, emitting a sweet anisate odour, as remarked by Linnæus. *Leaves* also similar, but not much above half the size or even less than that, firmer, more waved and wrinkled, and of a grayer green, with more strongly deflexed and invo-

Plant. Hist. p. 301 (left-hand fig.); that of *Fl. Danica*, tab. 434, may admit of doubt.

The Oxlip has been thought by many a hybrid between the Cowslip and the Primrose, but, conceding the point to those who still insist on keeping these two latter separate, from what we know of the modifications to which both are subject, and by which they as it were anastomose in the Polyanthus, it is reasonable to conclude that the Oxlip is the primary deviation from the Cowslip to the Primrose form, and an advance half-way from the Cowslip to the Polyanthus, which last is itself pretty exactly at the point of structural equidistance between *P. veris* and *P. vulgaris*. The specific identity however of the Cowslip and Primrose being once admitted, the notion of the Oxlip being a mule production falls to the ground immediately.

The Cowslip may be regarded as a contracted and as it were concentrated form of the Primrose, with smaller leaves and flowers, which last are more highly coloured and more powerfully scented, the peduncles shorter, the limb of the corolla contracted and hence cupped or concave, and the leaves constricted in the middle; each of these differences denoting a concentration or abridgment of the organs in the entire plant.

Mr. H. C. Watson says:—"Even those botanists who refuse faith in the carefulness or exactness of the experiments on record may see with their own eyes that the intermediate links (between the genuine Primrose and Cowslip) do exist. Indeed they may be raised by anybody, may be seen in many gardens, or may be found wild by diligent search. Nevertheless, while I see no escape from the necessity of doing so, I am still somewhat reluctant to place Cowslip and Primrose as a single species. The fact once fairly admitted of such extensive variations of a single species, must throw doubt upon thousands of supposed species as they now stand recorded and described in books."—*Phytologist*, ii. p. 44.

The fact is, these forms of *Primula* are at once a stumbling-block and a warning to the contenders for minute specific characters, which they must find very difficult to gainsay.

lute margins, spreading nearly or quite flat in a circle, at least the outermost, the inner more or less erect; suddenly contracted in various degrees about their middle by the abrupt attenuation of the green portion or disk of the leaf towards the petiole, giving to the upper half an oblong or ovate, not obovate, figure: in all my specimens the upper side of the leaves is clothed with a fine very short pubescence. *Scape* solitary or terminal, from 5 or 6 to 8, 10, or 12 inches high, rounded or obscurely angular, finely downy and (especially towards the base) mostly purplish, quite naked or leafless. *Flowers* in a terminal globose or sub-globose umbel, or often inclining unilaterally, with a delicious fragrance having much affinity to that of ripe oranges, though not exactly the same, and quite different from the scent of the Primrose, mostly lax, nodding or drooping, often partially or entirely erect, on downy peduncles from $\frac{1}{4}$ an inch to 1 or 2 inches in length, having a small, ovate or lanceolato-acuminate and keeled bract under each. *Calyx* about 7 or 8 lines in length, pale yellowish or greenish, scarcely contracted at the mouth, nearly ovate or somewhat campanulate, much inflated or ventricose, shorter than the tube of the corolla and sitting very loosely around it, finely pubescent all over, but not woolly as in the Primrose, much less deeply and plicately angular, cleft scarcely above $\frac{1}{4}$ th of its length into 5 broad, ovate or roundish, obtuse, mucronate segments, often a little acute and occasionally 2- or 3-toothed at the summit. *Corolla* variable in size, but in the normal form we are describing mostly smaller than in the Primrose, the *limb* glabrous, cupped or concave, rich golden-yellow, with a bright orange or fulvous spot at the base of each segment, these last short, cordato-rotundate, not overlapping one another, the emargination rather obtuse, the *tube* slightly downy at top, with a thickened glandular crown or rim at the mouth, more conspicuous than in the Primrose. *Stamens* with the two modes of insertion observable in the Primrose. *Style* slightly hairy, stouter, sometimes thickened in the lower half. *Germen* much larger and broader, more depressed or less conical. *Capsule* much shorter than the loosely investing persistent calyx, broadly elliptical, thin and brittle, many-ribbed, opening at the summit by about 10 (often more or less) strongly recurved unequal teeth. *Seeds* angular, very unequal and irregular in size and shape, yellowish gray thickly sprinkled with black depressed points, becoming at length deep rusty brown, rough, cellular and furfuraceous on the surface.

The smell of the flowers of the Cowslip have much affinity with odour of the fresh rind of ripe oranges, though not exactly the same. Linnæus observes that the roots have an anisate flavour; they certainly possess a sweet and somewhat aromatic odour. The flowers, as well as those of the Primrose, are sometimes made an ingredient of puddings, and those of the former enter into the composition of a well-known home-made wine.

The Primrose and the Cowslip are objects dear alike to the heart of childhood and to maturer years, but when transplanted into the garden it is hardly possible to preserve either in the native elegance and simplicity so captivating in their wild condition. Richness of soil soon converts the modest Primrose and the fragrant golden-eyed Cowslip into the flaunting and gaudy Polyanthus, where depth and variety of colouring but ill supply the grace and simplicity for which they have been exchanged.

II. *LYSIMACHIA*, Linn. Loose-strife.

"*Calyx* 5-partite. *Corolla* rotate. *Stigmas* 5—6, not distinctly hairy, sometimes with alternating sterile filaments. *Capsule* 1-celled, 5—10 valved."—*Br. Fl.*

* *Flowers* panicled. *Stem* erect.

1. *L. vulgaris*, L. Great Yellow Loose-strife. "Leaves opposite or whorled 3 or 4 together nearly sessile ovate or ovato-

lanceolate, the lower ones narrower, flowers in a terminal leafy panicle, stem erect."—*Br. Fl.* p. 332. *E. B.* t. 761.

In wet meadows, thickets and osier-beds, on ditchbanks and edges of ponds and rivers, in many places abundantly. *Fl.* July, August. *Fr.* September, October. 2l.

E. Med.—In various parts of Sandown level, as in the marsh-ditches between Yarbridge and Yaverland, and on the skirts of Lake common. Abundant in swampy thickets higher up towards Newchurch, in Alverston lynch, Borthwood lynch, and all that neighbourhood. Abundantly in Horringford withy-bed. By the roadside (the new cut) between Wootton parsonage and Palmers Brook. By the stream-side near Bow bridge, Godshill. Very fine and profusely in a willow copse a little E.S.E. of Bagwich farm, by the brook between that place and Godshill. Abundant in a willow thicket near Stone (the var. with fulvous base to the corolla). Willow thickets by Budbridge farm, in plenty (the unspotted var.) In the centre of the pool in Marshcombe copse. Willow thicket between Messley farm and Langbridge. Pan moor, *G. Kirkpatrick, Esq.* Marsh near Easton, *B. T. W.*

W. Med.—In Kingston copse, plentifully.

Root creeping, and throwing out white runners to the length of many feet or even yards in ponds and ditches, whereby it increases fast. *Stem* erect, 2—4 feet high, simple or much and oppositely branched, bluntly angular, furrowed and downy with fine soft pubescence, excepting near the base, where it is glabrous, with usually a reddish tinge, and bare of leaves to a considerable distance upwards. *Leaves* opposite or in whorls of 3, 4, or even 5 around the stem, very shortly petiolate, extremely variable in size and shape, lanceolate or ovato-lanceolate, the lowermost narrower and even linear, dull green, veiny, more or less downy on both sides, subtomentose beneath, their edges waved and obscurely undulato-crenate, often bordered with a row of reddish pellucid dots that are sometimes found scattered over the whole leaf, but, like the marginal ones, are at other times very few or wanting, though common, I believe, to most species of the genus. *Flowers* in leafy corymbose clusters terminating the stem and branches, forming a mostly pyramidal panicle, large, golden yellow; very handsome, on long, erect, hairy pedicels, having a linear suberect bract at the base of each. *Sepals* ovato-lanceolate, acute, with several (about 5) pellucid nerves and an orange-red border, their margins ciliato-glandulose. *Corolla* sprinkled with mealy glands, glabrous at the back, its segments ovate, bluntish, quite entire, neither notched nor fringed, becoming revolute soon after the plant is gathered, often fulvous within at the base. *Stamens* 5, all equal, short, erect, densely glanduloso-pilose, their broad, dilated, often bright red filaments perfectly united for half their length into a short wide tube without intermediate teeth (abortive stamens); *anthers* erect, triangulari-sagittate, with a minute point, pale yellow, sometimes streaked with orange. *Style* longer than the stamens, slightly hairy and angular; *stigma* simple, greenish. *Germen* conical, with 5 lines or furrows, quite smooth. *Capsule* smooth, globose, tipped with the style, reddish or yellowish, glabrous or slightly pubescent at the summit, 5—10 valved? not always perfected. *Seeds* rather numerous, white, cream-coloured or reddish, of an earthy porous aspect, gibbous and angular, the angles bordered.

In very shady wet thickets the leaves are sometimes deep green, shining and glabrous above, and the whole plant extremely luxuriant; in this state I have gathered it between Apse and Ninham above 6 feet in height. The beautiful variety with the base of the corolla fulvous, and red or orange-coloured stamens, is frequent on the Wilderness, where seeds are ripened by this species in abundance.

The seeds have a thick mealy covering (testa?), of a white or reddish colour, like chalk or clay in appearance, and friable as those substances.

** *Flowers solitary, axillary. Stem procumbent.*

†? 2. *L. Nummularia*, L. *Creeping Loose-strife. Moneywort. Herb Twopence*.* "Leaves opposite subcordate or ovate obtuse shortly stalked, stem prostrate creeping, peduncles 1-flowered axillary solitary shorter than the leaves, calycine segments ovate acute, filaments glandular connected at the base."—*Br. Fl.* p. 333. *E. B.* t. 528.

On wet ditchbanks, in low moist meadows and wet clayey pastures; very rare, and doubtfully wild. *Fl.* June, July. 24.

E. Med.—In a field exactly opposite Lord Spencer's house, Ryde, in a hole formerly dug for planting a tree, *William Jolliffe!!*

W. Med.—Above the shore near W. Cowes, the *Rev. W. H. Coleman*, who is not certain of the correctness of the observation.

A less elegant though more showy plant than the following. *Root* slender, creeping with many lateral fibres. *Stems* several, quite trailing or prostrate, often rooting below, scarcely branched, 1—2 feet in length, glabrous, quadrangular, compressed alternately or between each pair of leaves in a different direction,—that is to say, now laterally, now vertically,—the angles winged. *Leaves* opposite, on very short channelled footstalks, orbiculari-cordate, with a minute point, bright green, wavy, smooth and shining. *Stipules* none. *Peduncles* solitary in the axil of each leaf, single-flowered, more or less erect or recurved, smooth and angular like the stem, mostly shorter than, or about as long as, the leaves. *Flowers* much larger and more showy than those of *L. nemorum*, though of a paler yellow, and more resembling the blossoms of *L. vulgaris* or rather of *L. punctata*. *Sepals* cordato-triangular; acute, equal, their bases deflexed. *Petals* ovate, obtuse, fringed with minute, yellow, stalked glands that are scattered over the whole surface. *Stamens* 5, erect, thickly beset with stalked glands, combined at their dilated bases; *anthers* erect, pale yellow, apiculate. *Style* long, straight and angular; *stigma* flat, glandular. *

The leaves, calyx and corolla in my specimens are sprinkled all over with minute red dots, as observed by Mr. Leighton in his admirable 'Flora of Shropshire,' though they had been previously remarked by Mertens and Koch; they are indeed common to most if not all the species of *Lysimachia*.

Naturalized occasionally in shrubberies and on banks near gardens, in which with us this handsome creeper is universally cultivated. In London it is commonly grown in pots, for decking window-sills and balconies.

3. *L. nemorum*, L. *Wood Loose-strife. Yellow Pimpernel*. "Leaves ovate acute opposite shortly stalked, stem prostrate, peduncles 1-flowered axillary solitary longer than the leaves, calycine segments linear-subulate, stamens smooth distinct."—*Br. Fl.* p. 333. *E. B.* t. 527. *Lerouxia nemorum*, *Merat. Nouv. Fl. de Par.* ed. 2da, p. 77.

On moist shady hedgebanks and in woods; common. *Fl.* May—August. 24.

Herb quite glabrous in every part. *Root* or rather rhizoma creeping, and sending off numerous brownish white much-branched fibres. *Stem* one or several, from a few inches to a foot or a foot and a half long, simple or very slightly branched below, leafy, procumbent, the extremities only erect or ascending, wavy, rounded, but grooved on opposite sides in an alternate direction between the

* The Latin name was anglicized into Herb Twopence by Turner from a fanciful resemblance in the small round leaves to (silver) pennies "by coples one against another."

leaves, smooth, solid, succulent and shining, green or reddish, rooting for the most part at the lower joints. *Leaves* opposite, never, I believe, in threes or fours, bright green above, paler, somewhat glaucous and shining beneath, mostly sprinkled with a few minute black dots, ovate or roundish ovate, subcordate, acute, with a small callous point, the margins roughish with minute cartilaginous serratures, suddenly contracted into their very short, broad, channelled *petioles*, that are curved upwards and forwards, and have a narrow marginal dilatation or auricle on each side of their somewhat gibbous and clasping bases. *Peduncles* axillary and opposite or solitary, when in flower as long as or longer than the leaves, filiform, single-flowered, more or less erect and wavy, in fruit strongly and even spirally recurved. *Flowers* in size, colour and appearance much resembling the blossoms of the exotic *Dysandra repens*, though very different in their structure, which approaches that of *Anagallis arvensis*, the present species connecting that genus with the genuine *Lysimachieæ*. *Calyx* cleft for about $\frac{3}{4}$ ths of its entire depth, the segments equal, linear-lanceolate, subulato-acuminate, faintly 3-ribbed, spreading horizontally, somewhat keeled at the back, their edges slightly membranous and glandulose suberrate. *Corolla* nearly flat or salver-shaped, longer than the calyx, from 5 to 7 lines in diameter, bright yellow, cleft down to the very short tube into 5 ovate, obovate or ovato-oblong segments, attenuated into claw-like bases of a darker colour and shining, their superior margins somewhat jagged, minutely crenulate or nearly entire, fringed with minute, very shortly stalked, pellucid glands. *Stamens* 5, yellow, perfectly free or unconnected below, filiform, slightly thickened upwards, quite glabrous, shorter than the corolla; *anthers* linear-oblong, attached to the filament by one extremity, and at length recurved: between, and in the same plane with, the stamens, are short glandular processes (abortive stamens?), forming a ring at the mouth of the almost obsolete tube of the corolla. *Style* long, slender, greenish, a little thickened upwards. *Capsules* small, globose, membranous and pellucid, tipped with the long slender style, much shorter than the calyx, 5-valved, according to Babington (*Man. of Br. Bot.*) usually dividing longitudinally (transversely, as in *Anagallis*?) into two parts, sometimes indehiscent, rarely with 4 or 5 valves.

A very ornamental plant on rockwork or in pots, for apartments, its long slender stems gracefully depending from the vessel on all sides, and exceeding the more showy *L. Nummularia* in the elegance of its leaves and flowers.

III. ANAGALLIS, Linn. Pimpernel.

"*Calyx* 5-partite. *Corolla* nearly rotate. *Stamens* 5, hairy. *Capsule* bursting all round transversely."—*Br. Fl.*

1. *A. arvensis*, L. *Common Pimpernel. Poor Man's Weather-glass.* "Stems ascending or subprocumbent branched, leaves opposite or ternate ovate sessile dotted beneath, peduncles longer than the leaves, calyx nearly as long as the rotate corolla."—*Br. Fl.* p. 333. *E. B. t.* 529.

β. Flowers blue. *A. cærulea*, Schreb. : *Sm. E. Fl.* i. p. 281. *E. B.* xxvi. t. 1823. *Fl. Dan.* ix. t. 1570.

γ. Flowers pale pink or rose-coloured, with a purple eye.

[δ. Flowers white.—*Edrs.*]

Universal and abundant in cultivated and waste ground, by waysides, under walls, &c., also in woods and pastures, but less copiously. *Fl.* May—November. ☉.

β. In cornfields, rare. Field between Westridge and St. John's, 1839. Field at St. Clare, near the sea, 1844, the *Lady Catherine Harcourt*. Sandown, on a piece of waste ground near the sea, *Miss Lovell*. At Bonchurch, *Dr. Martin*. Quarr copse, a single specimen, *Lady Knowles*!

γ. Border of a field between Weeks's and Little Smallbrook, rather plentifully, 1837, *Miss Theodore Price*; but I could not find it the year following! Field at

the top of Dover street, Ryde, *Miss Lucas* !!! In a field by Shanklin, on the footroad from thence to Luccombe, *Miss Kirkpatrick* !!! Near Barnsley farm, *Dr. Bell-Salter* !! Under the cliff a little way from the chine, Shanklin, 1842.

[*δ*. Tyne hall, Bembridge, *Miss More*.—Edrs.]

Herb quite glabrous and somewhat succulent. *Root* pale reddish, with copious tufted fibres. *Stems* numerous, spreading and procumbent, from a span to upwards of 2 feet in length at the close of summer, quadrangular, the angles slightly winged and often twisted, partially streaked with brownish red, solid and brittle. *Leaves* opposite or 3 together, quite sessile, dark green and somewhat fleshy, ovate or ovato-lanceolate. *Peduncles* solitary, axillary, single-flowered, as long as or longer than the leaves, subcylindrical, strongly recurved in seed. *Flowers* rather pale scarlet, with a purple eye, fully expanding only in dry sunny weather, and closing entirely before rain. *Capsules* thin, pale brown, the size of peppercorns, perfectly spherical and glabrous, marked with several slender longitudinal ribs and the single transverse line of dehiscence, tipped with the permanent style. *Seeds* numerous, brown, almost hemispherical, covered with a membranous tissue of cells;* their convex part immersed in the deeply alveolate globose receptacle.

In my Isle-of-Wight specimens of *β*, the stems are equally procumbent, and the whole plant, with the exception of its rather smaller and differently coloured flowers, in all points exactly similar to the common scarlet form amongst which it was growing. In both, the edges of the petals are finely fringed and minutely notched, and that in an equal degree. The leaves of the blue Pimpernel are often lanceolate, as I have gathered it near Cobham in Kent, but this character is inconstant, the leaves in the specimens from near Ryde being as broadly ovate as in the usual or normal state of the plant. Mr. Leighton has remarked the same of this variety in Shropshire. In the white or pale-rose variety, *γ*, the corolla is also smaller than usual, and about the same size as in *β*; in other respects it does not differ from *α*.

The absolute specific identity of the forms of *A. arvensis* just described has been established beyond all controversy by Professor Henslow (see London's Mag. Nat. Hist. iii. p. 537). I have myself seen the cultivated *Anagallis* in the garden of the Rev. — Sherson, of Yaverland, bearing flowers of a bright blue on the same stem with the flesh-coloured variety, of which there was an entire bed.

The flowers of this plant often undergo, at the close of autumn or in wet seasons, from deficiency of light and heat, a remarkable transformation, the corolla becoming cleft to the very base or pentapetalous; the segments rounded, much shorter than the calyx, and wholly green or partially coloured; the stamens smooth. Sometimes the calyx is converted into a leafy whorl; the capsule becomes 5-angled, or is itself turned into a bundle of leaves. All these changes I have remarked in the wet autumn of 1841, on specimens from fields above Sandown bay. They are also noticed by Gaudin, in his Fl. Helv. ii. p. 67 (ad calcem.), who observes that the seeds of the common scarlet *Anagallis* are fatal to small birds, which eat those of the blue variety (kept by him distinct) with impunity.

2. *A. tenella*, L. *Bog Pimpernel*. "Stem creeping filiform, leaves opposite ovate or roundish stalked, peduncles longer than the leaves, calyx 4 times shorter than the broadly and widely funnel-shaped corolla."—*Br. Fl.* p. 333. *E. B.* t. 530.

In boggy, springy, spongy ground, in peat-holes, on slipped land, and in wet woods; very frequent. *Fl.* July—August. *24*.

E. Med.—Near Ninham farm, and in a field near Weeks's, Ryde. Abundant near Niton, especially between Knowle and the Sandrock spring, fringing the

* In the green state the seeds are covered with roundish vesicular prominences, that on ripening burst, leaving a membranous or chaffy pellicle, in the form of an irregular network.

margin of a little stream descending to the shore from the cliffs, and where *Mr. George Kirkpatrick* and *myself* found a variety with pure white flowers, 1839. Bog at Cockleton, near Cowes. On Lake common. Damp and boggy spots on Blackpan common, in plenty, 1848. Most abundantly on a moory meadow close to Stone farm, 1844. In Luccombe chine, a very little way from the path on the left going down to the sea, in great plenty, *Miss G. Kilderbee*! Apse heath, *Mr. W. D. Snooke*.

W. Med.—Boggy ground near the shore between Norton and the preventive-station, in plenty. Heath at Colwell (where I find it), and many other places in the parish of Freshwater, in plenty, *Mr. W. D. Snooke*.

A delicate and elegant plant, its short but tangled stems forming, with the grass amongst which it grows, a dense flowery turf, at other times creeping by itself in patches on the denuded soil, the herbage quite smooth and glabrous. *Stem* prostrate and creeping, filiform, simple or branched, bluntly quadrangular, a few inches long at most, and emitting at intervals a few rooting fibres. *Leaves* opposite or somewhat alternate, very small, not above a quarter of an inch in length, ovato-rotundate, bright pale green, somewhat fleshy and succulent, and from their vascular structure appearing covered on both sides with minute depressed dots; slightly pointed, the apex thickened, quite entire, obscurely nerved, suddenly tapered into extremely short, erect or oblique, ascending *petioles*. *Flowers* large for the size of the plant, about $\frac{1}{3}$ rd of an inch long. *Peduncles* axillary, solitary, single-flowered, several times the length of the leaves, spreading or reclining. *Calyx* cleft nearly to the base into 5 lanceolate, somewhat concave, very acutely pointed segments, with pellucid subserrated margins, and no apparent ribs. *Corolla* above twice the length of the calyx, rotato-campanulate, divided almost to the bottom into 5 ovato-oblong, equal, scarcely (except in seed) spreading segments, of a pale rose-red, sometimes nearly white, with darker veins, their margins very entire and eglandulose. *Stamens* erect, inserted at the orifice of the very short almost obsolete tube of the corolla, their flat pellucid *filaments* perfectly united below into a short tube, which on its upper part and on the lower free portion of the filaments is thickly clothed externally with long, transparent, moniliformly jointed hairs; *anthers* greenish yellow. *Style* very long, cylindrical; *stigma* a few bristle-like glands. *Capsule* minute, globose, obscurely 5-angled, the two hemispheres marked by a rather abrupt transverse line of dehiscence, thin, netted and papery, tipped with the long persistent style; rather sparingly matured. *Seeds* rather few (about 8 or 9, often less), deep rusty brown, scabrous-punctate, similar in shape to those of the last species.

IV. CENTUNCULUS, Linn. Chaffweed.

“*Calyx* 4-partite. *Corolla* with a globose inflated tube; limb spreading, 4-partite. *Stamens* 4, short, beardless. *Capsule* bursting all round transversely. (*Leaves* alternate. *Flowers* sessile).”—*Br. Fl.*

1. *C. minimus*, L. *Small Chaffweed. Bastard Pimpernel.* “*Flowers* sessile, corolla without glands at the base.”—*Br. Fl.* p. 334. *Sm. E. Fl.* i. p. 217. *E. B.* viii. t. 531. *Curt. Fl. Lond.* fasc. 3, t. 11. *Curt. Br. Entom.* xvi. t. et fol. 768.

On moist sandy heaths and commons; rare, but probably, by eluding observation from its minuteness, only apparently scarce. *Fl.* June, July. ☉.

E. Med.—At the foot of Bleak down, by the junction of the Chale, Niton and Godshill roads.

W. Med.—Near Heath farm, by Newport. Heath at Colwell, plentifully, *Mr. W. D. Snooke*, *Fl. Vect.*!!!

V. GLAUX,* *Linn.* Sea Milkwort.†

"Perianth single, inferior, campanulate, coloured, 5-lobed. Capsule globose, 1-celled, 5-valved, 5-seeded. Seeds on a globose, central, free placenta."—*Br. Fl.*

1. *G. maritima*, L. *Sea Milkwort. Black Saltwort. Sm. E. Fl.* i. p. 337. *Br. Fl.* p. 331. *Lind. Syn.* p. 183. *E. B.* i. t. 13.

In muddy salt-marshes, and on the grassy margins of creeks and tide-rivers; frequent. *Fl.* June, July. 24.

E. Med.—Most abundantly in the marsh-meadows behind the Dover, Ryde, especially along the cuts, drains and ditches that intersect them. At the mouth of the Wootton river, in plenty.

W. Med.—Abundant by the Medina above W. Cowes. Marshy sides of the Yar, under Beckett's copse, &c. In Gurnet bay, *Miss G. Kilderbee*.

Whole plant perfectly smooth, glabrous and succulent. Root perennial, of several reddish white, tapering, branched fibres. Stem solitary (or several?), the lower part often creeping or rhizomatous and emitting runners, in smaller plants often erect, more usually, as in the larger, decumbent or ascending, and sometimes rooting below, from 2 or 3 to 6, 8 or 12 inches long, pale green, solid and rounded, but scored by a decurrent groove from the basal corners of the leaves to the axils of those next below, more or less copiously branched, often from the very bottom, branches erect or ascending, very leafy. Leaves from 2 or 3 to 8 or 10 lines in length, the lower ones mostly opposite, the rest alternate or scattered, quite entire, elliptical, ovato-elliptical or elliptic-lanceolate, obtuse or pointed, sessile, crowded, suberect and imbricate on the shorter branches, more distant and spreading on the larger, flat, bright shining green, a little fleshy and succulent, sprinkled on both sides, but most so on the upper side, with minute pits or puncture-like depressions, their margins cartilaginous under a magnifier. Stipules none. Flowers axillary, solitary, mostly about the middle of the stem, on extremely short, almost obsolete, terete peduncles, or quite sessile, sometimes appearing crowded into leafy clusters, about 3 lines in diameter. Perianth single, petaloid, white, suffused, streaked and dotted with rose-red, most deeply near the base externally, sometimes nearly colourless, shortly campanulate, cleft above half-way into 5 obovate or obovato-oblong, nearly equal, very entire segments, which are spreading at summit. Stamens erect, inserted at the very base of the germen, on the bottom of the perianth and alternate with the segments, which they about equal in length; filaments deep rose-colour, simple; anthers at length deciduous, roundish; pollen yellowish green. Germen ovato-globose, greenish, plain or streaked with purple, tapered into the conico-cylindrical simple style, which is greenish or purplish and about as long as the stamens. Capsules small, sessile, ovoido-globose, mucronato-acuminate, at first succulent, finally dry and whitish, 5-valved. Seeds from 2 or 3 to 8 or 9 (usually 5 or 6).

This plant has much of the habit of a *Lythrum*. The seeds much resemble those of *Primula* and *Anagallis*, whilst the capsule is nearly that of *Lysimachia*. Fries says it is reported to bear a rotate infundibuliform corolla in the S. of Europe, but no such increase of the floral envelope is noticed by Bertoloni.

By a strange misquotation in the 'English Flora,' poor Hudson is represented as making our *Glaux* a variety of *Herniaria glabra*!—a blunder the latter is wholly guiltless of, having fully described that plant in its proper place. The synonyms and references to Ray and Petiver relate to *H. ciliata* of Babington.

* Name: the *Γλαῦξ* of Dioscorides, from *γλαυκός*, sea-green or glaucous (*glaucus*, Lat.); such being the colour of the leaves beneath. See *Glaucium*, p. 24.

† The English name for this plant was derived from an opinion entertained by the ancients of its efficacy in augmenting the secretion of milk.

VI. SAMOLUS, Linn. Brookweed.

"*Calyx* 5-cleft. *Corolla* salver-shaped, its tube short, with 5 scales (imperfect *stamens*) at its mouth, alternating with the lobes. *Capsule* half-inferior, opening with 5 valves."—*Br. Fl.*

1. *S. Valerandi*, L. *Common Brookweed. Water Pimpernel.* "Stem simple or sparingly branched leafy, leaves obovato-oblong or spatulate very obtuse, racemes many-flowered straight simple erect leafless finally much elongated, pedicels bracteate patent, corolla twice the length of the calyx."—*Br. Fl.* p. 334. *Sm. E. Fl.* i. p. 324. *Lind. Syn.* p. 185. *E. B. x. t.* 703. *Curt. Fl. Lond.* fasc. 4, t. 20. *Curt. Br. Entom.* iv. t. 154.

In wet marshy places, along brooks, the sides of drains, ditches and pools, often near salt water; not unfrequent. *Fl.* June—September. *Fr.* September, October. 24.

E. Med.—In the marsh-ditches behind the Dover, here and there. Plentifully in the boggy part of the wood on the West shore of the Wootton river at its mouth, 1845. On the beach at Woolverton, by St. Lawrence, near a spring, Samuel Hailstone, jun., Esq.!

W. Med.—Salt-marshes along the Yar, and about a little pool in a meadow not far from Yarmouth mill. Pretty plentiful in the marsh at Freshwater gate. In salt-marsh land by the Yar, opposite Freshwater farm, plentifully, 1844. Pretty abundant on the boggy part of Colwell heath. Banks in Colwell bay, Mr. Snooke!!! Near Blackgang, Miss G. Kilderbee! Blackgang chine, J. Curtis, Esq.

Herb pale subglaucous green, remarkably glabrous in every part. *Root* a dense tuft of whitish slender fibres. *Stem* solitary, or one principal and several smaller ones, from an inch or two to upwards of 18 inches in height, erect, solid, roundish or obscurely 2-edged, simple or branched, leafy. *Leaves* alternate, quite entire, with a small point, narrowed below into short petioles, their surface with a waved or blistered appearance, their edges more or less inflexed; those of the root forming a rosette, on longer footstalks and somewhat spatulate. *Flowers* erect, in gradually elongating, axillary and terminal, upright racemes, their pedicels erect or patent, with a sudden bend or joint about $\frac{1}{3}$ rd of their length beneath the calyx, and at which joint there is a small leafy bract. *Calyx* in 5 (sometimes 6) erect, triangular, pointed and persistent segments, sprinkled with small dots or depressions (*glands*). *Corolla* in 5 (rarely 6) deep, roundish, somewhat wedge-shaped divisions, the tube very short and wide, at the summit of which, and between each segment, is a narrow, white, scale-like process, pointing inwards and upwards, supposed to be abortive *stamens*, as the 5 perfect ones are inserted below and alternate with them near the base of the tube, and, like the barren ones, connivent; *filaments* short, broad at the base; *anthers* broadly triangular, bursting along their lateral edges. *Style* very short, thick and angular; *stigma* flat. *Capsule* globose, adnate with the calyx, tipped with the style, bursting by 5 equal, recurved, triangular valves opposite to the erect and much longer calyx-segments, that form a crown to the seed-vessel. *Seeds* numerous, brown, roughish and subpellucid, in shape resembling those of *Anagallis*, but more angular, and, like them, attached to a large, round, free and central receptacle.

In May, 1847, I remarked a form of this plant growing plentifully at Carrollton and elsewhere about New Orleans, having the stem much branched, leaves oblong, obovate or obovato-elliptical, of a bright green, very shining and membranaceous, all, even the radical, leaves acute, those on the stem most pointed. It is probably only a variety, resulting from a rich soil and shaded situation, but I have not seen anything like it in Europe.

This plant is generally stated to occur in nearly all quarters of the globe, and

it was long supposed that the present was the only species of the genus. A few others are now enumerated by systematic writers, one of which, a native of North America and long confounded with our European plant, is the *S. floribundus* of Kunth. This, which I gathered plentifully about New Orleans in 1847, differs widely in its much-diffusely-branched stem; shorter, less erect and subpaniculate racemes; in its very slender, filiform, more spreading and generally straighter pedicels; and in its much smaller flowers and capsules, the former very minute, scarcely half the size of *S. Valerandi*, the corolla but little exceeding the calyx in length.

The leaves are described as obtuse, and so they often are, but in the plant as I find it at Carrollton, near the city just mentioned, all the leaves, even the very lowest, are more or less acute, the middle and upper obovato-lanceolate and very distinctly pointed, of a thin and membranaceous texture, and bright, lucid and somewhat shining green.

The *S. Valerandi* of 'Flora Cestrica' evidently belongs to *S. floribundus*, and the specific characters of the former must be amended.

Order LXI. PLUMBAGINACEÆ, Juss.

"*Calyx* tubular. *Corolla* regular, of 5 united or distinct *petals*. *Stamens* hypogynous or inserted upon the corolla. *Ovary* single, 1-celled, with 1 *ovule* suspended from the apex of a stalk arising from the base of the cell. *Styles* 5, sometimes united to the middle or to the summit. *Stigmas* 5. *Capsule* indehiscent, or opening irregularly, 1-seeded. *Embryo* straight, in the axis of farinaceous *albumen*. — Herbaceous or somewhat shrubby plants. Flowers often *capitate* or *spiked*."—*Br. Fl.*

I. STATICE, Linn. Sea Lavender.

"*Calyx* funnel-shaped, plaited, dry and membranaceous. *Petals* united at the base, bearing the stamens. *Styles* distinct, glabrous: *stigmas* filiform, glandular. (*Flowers* in unilateral spikes on a paniced *scape*)."—*Br. Fl.*

1. *S. Limonium*, L. *Sea Lavender*. "Leaves elliptic-lanceolate stalked mucronate single-ribbed, scape with a much-branched spreading corymb at the top, branches curved outwards," "calyx-segments acute with intermediate teeth."—*Br. Fl.* p. 336. *E. B.* t. 102.

β. variflora. Flowers distant on the branches. *Ray, Syn.* ed. 3tia, p. 202. *S. rariflora*, Dreij. : *E. B. Suppl.* 2917.

In muddy salt-marshes, and along the shores of tide-rivers and creeks; frequent. *Fl.* July—September. 24.

E. Med.—Shores of the Yar and Wootton rivers. Plentiful along the Medina above Cowes. Brading harbour, in abundance, *Mr. Snooke*.

W. Med.—Newtown marshes, in the greatest profusion. Yarmouth, *Mr. Snooke*. On the rocks at Scratchell's bay, near the Needles, *Mr. E. Lees* in *New Bot. Guide Suppl.* May not this station belong to *S. spathulata*, as *S. Limonium* does not usually grow upon rocks or cliffs, which the former invariably does?

β. In muddy places about Wootton creek, intermixed with the ordinary *S.*

Limonium, and growing to a large size (2 feet or upwards), *Rev. G. E. Smith*. Shores of the Wootton river, in great plenty, with the common form, from which I can really find no distinguishing mark beyond that of habit, — *Hudson, Esq.*, 1848!!! Side of the Yar, near Freshwater mill, sparingly.

This species greatly resembles the next in appearance, but is much larger, and is never, I believe, found growing, like that, on rocks or cliffs, but only in low muddy places within reach of the tide. The very large, thick, blackish, spongy and almost woody root sends up tufts of flowering stems from a few inches to a foot and a half in height.

Leaves all radical, about half as high as the scapes, glaucous-green, leathery, elliptic-lanceolate, quite entire, tapering into thick channelled footstalks formed by the enlargement downwards of the single strong midrib, and which terminates in a long and straight or small and deflexed mucro at the apex of the leaf. *Scape* erect, branching chiefly towards the summit, either roundish or more or less angular and compressed, or somewhat 2-edged, its branches erecto-patent, forming a level-topped corymbose panicle. *Flowers* bluish purple, in small, imbricated, erect or reclining clusters, in α . usually much crowded, in β . more distant or scattered. *Calyx* tubular, funnel-shaped, with 5 strong, prominent, purplish ribs, its summit in as many white, chaffy or membranous, plaited, acute and rather deep segments, irregularly toothed or jagged, chiefly about their bases; the lower part hairy along the ribs or angles. *Petals* obovato-lanceolate, combined only at the extremity of their narrow tapering limb. *Stamens* inserted on the petals at their point of union; *anthers* oblong, reddish or pale yellow, with a bright red spot on the back, where the *filament* is inserted, 2-celled, bursting laterally; *pollen* of a few coarse roundish grains, pale yellow. *Germen* obconical, striated, tapering greatly downwards, the summit flat; winged as it were with 5 very prominent rounded angles or ridges. *Styles* 5, long, white, spreading, seated on the flat top of the germen opposite the ridges; *stigma* none. *Capsule* membranous, 1-celled, shorter than the persistent calyx, oblong-obtuse, with 5 blunt plait-like angles or lobes, dilated upwards and tipped with the base of the styles. *Seeds* brown, narrowly oblongo-elliptical, glabrous, a little compressed, with a slight ridge down the centre on one side (raphe?); affixed to the bottom of the cell by the very long funiculus from the apex of the seed.

2. *S. spathulata*, Desf. Dwarf Sea Lavender. Rock Sea Lavender. "Leaves spathulate narrowed into a winged stalk more or less mucronate somewhat 3-nerved at the base, scape branched from below the middle, panicle elongated, branches distichous, spikes erect, calyx with plane blunt segments without intermediate teeth."—*Br. Fl.* *S. Limonium* β ., *Sm. E. Fl.* ii. p. 116. *Lind. Syn. Suppl.* p. 327. *S. binervosa*, *G. E. Smith. E. B.* xxxvii. t. 2663. *Br. Fl.* p. 336. *S. cordata*, *G. E. Sm. Pls. of S. Kent*, p. 18, cum fig. *Ger. Em.* p. 4111, fig. 2. *Ray, Syn.* p. 202, No. 2.

On sea-cliffs; very rare. *Fl.* July—September. 4.

Isle of Wight, *Rev. G. E. Smith*, *Watson's New Bot. Guide*. In a subsequent communication Mr. Smith told me he believed it was collected on the cliffs near Freshwater, either by the Rev. Mr. Wood or the Rev. R. Price.

II. ARMERIA, Willd. Thrift.

"*Calyx* funnel-shaped, plaited, dry and membranous. *Petals* united at the base, bearing the stamens. *Styles* distinct, hairy: *stigmas* filiform, glandular. (*Flowers* collected into a bracteated rounded head, with an inverted cylindrical sheath)."—*Br. Fl.*

1. *A. maritima*, Willd. *Common Thrift*. *Sea Pink*. *Sea Gil-liflower*. "Leaves linear 1-nerved, awns of the calyx short."—*Br. Fl.* p. 335. *Statice Armeria*, L.: *E. B.* t. 226.

β. Heads of flowers beautiful shining crimson in the bud.

On rocks, cliffs and pastures by the sea, as well as on the shore itself; abundantly. *Fl.* April—September. 24.

On St. Helens spit, abundantly. By the Medina above Cowes. By the Yar at Yarmouth.

β. St. Helens spit.

Capsules less deeply and more broadly 5-lobed than in *Statice Limonium*, the lobes smooth. *Seeds* smaller and shorter, oblongo-elliptical, obscurely ribbed, brownish, darker at each end.

Order LXII. PLANTAGINACEÆ, Juss.

"Sometimes monœcious. *Calyx* (of the perfect and staminate flowers) 4-partite. *Corolla* scarious, 4-lobed. *Stamens* 4, or rarely 1, alternate with the segments of the *corolla*. *Filaments* exserted. *Ovary* 1-celled with 1 *ovule*, or 2-celled with 4 or many *ovules*. *Style* and *stigma* simple, the latter rarely divided. *Capsule* opening transversely, 2- or 4-celled, with 2—4 or many seeds; or hard and indehiscent, 1-celled, 1-seeded. *Seeds* peltate, inserted on the dissepiments or at the base of the cell, rarely erect. *Embryo* in a fleshy or horny *albumen*. *Slightly bitter and astringent*. *Seeds mucilaginous*."—*Br. Fl.*

I. PLANTAGO, Linn. Plantain.

"*Flowers* perfect. *Corolla* with an ovate tube; limb 4-partite, reflexed. *Stamens* 4, inserted upon the tube of the *corolla*. *Capsule* opening transversely, of 2—4 cells, 2—4 or many-seeded."—*Br. Fl.*

The species of this genus are found in all parts of the world, but are most numerous in the S. of Europe and N. of Africa. Britain possesses only the five following, which are common to it and the rest of Europe.

* *Leaves entire or simply toothed. Root perennial.*

1. *P. major*, L. *Greater Plantain*. *Way-bread*. "Leaves broadly ovate mostly on longish grooved footstalks, scape rounded, spikes long cylindrical, sepals with a prominent dorsal nerve, capsule 2-celled with the dissepiment plane, each cell many-seeded."—*Br. Fl.* p. 338. *E. B.* t. 1558.

In meadows, pastures, waste places and by waysides; frequent. *Fl.* June—August. 24.

2. *P. media*, L. *Hoary Plantain*. "Leaves elliptical pubescent sessile or tapering into short and broad footstalks, scape rounded, spike cylindrical, sepals not keeled, capsule 2-celled with the dissepiment plane, cells 1-seeded."—*Br. Fl.* p. 338. *E. B.* t. 1559.

In dry, mostly calcareous pastures; abundant on the chalk formation. *Fl.* May—October. 24.

About Ventnor and other parts of the Undercliff, the prevailing species. Abundant everywhere on the chalk about Carisbrooke, Newport, Thorley, Calbourne, Bucombe, &c.

Capsules similar to those of the last, but somewhat shorter and more obtusely conical. *Seeds* 1 or 2 in each cell (1, *Sm.*; 2, *Koch*). I find very commonly the capsule 3-seeded, in the specimens before me, by abortion of one of the seeds, elliptical-oblong, plano-convex or concave on the inner side, dark brown, somewhat paler on the back in the centre, smooth.

Sir James Smith recommends the pouring a drop of sulphuric acid on the crown of the root for destroying this plantain on grass-plats, a valuable hint to such gardeners as have time to undertake and patience to go through with the operation.

3. *P. lanceolata*, L. *Ribwort. Plantain Ribgrass.* "Leaves lanceolate tapering at both ends, scape angular, spike ovate or cylindrical, bracteas ovato-acute or cuspidate, two of the sepals keeled, tube of the corolla glabrous, dissepiment of the capsule plane, cells 1-seeded."—*Br. Fl.* p. 338. *E. B.* t. 507.

In meadows, pastures, waste ground and by roadsides; everywhere. *Fl.* June, July. 24.

4. *P. maritima*, L. *Sea-side Plantain.* "Leaves linear grooved fleshy convex below, scape rounded, spike cylindrical, bracteas ovato-acuminate, sepals not winged, tube of the corolla pubescent, capsule 2-celled with the dissepiment plane, cells 1-seeded."—*Br. Fl.* p. 338. *E. B.* t. 175. *Sibth. Fl. Græc.* ii. t. 148.

In muddy salt-marshes, and pastures about the mouths of tide-rivers and creeks. *Fl.* June—September. 24.

E. Med.—Marshy meadows behind the Dover, Ryde, in great plenty, 1844. [St. Helens spit, by the ferry, *Dr. Bell-Salter*, Edrs.]

W. Med.—Salt-marshes about Yarmouth, frequent, 1844. By the Medina above Cowes, plentiful.

Root or rather rhizoma brownish, woody, with short stout fibres, sending up erect or oblique branches or ligneous suckers crowned with leafy tufts, forming dense clumps in salt-marshes. *Leaves* all radical, numerous, spreading, from the summit of the short woody crowns or suckers of the root, dull pale green, fleshy, brittle, excessively variable in size, smoothness, &c., as is the whole plant, according to altitude or as the situation is maritime or inland; mostly narrowly linear-lanceolate, often curved or sickle-shaped, from an inch or two to a foot or upwards in length, acute or acuminate, flattish or concave above towards the point, deeply channelled and semicylindrical towards the dilated, membranously winged, often purplish, sheathing base, into which the leaf tapers insensibly by no evident petiole; strongly but bluntly keeled on the back, quite entire or distantly and obsoletely denticulate, sometimes distinctly toothed, 5- or 7-nerved, marking the position of as many medullary fibres which traverse the thick parenchymatous substance of the leaf.* The base of each leaf, and more particularly of the innermost ones, is more or less copiously overspread with a loose cottony flocculence like that which connects the florets of several species of *Poa*. *Scapes* 1 or more from each bunch of leaves, which when in flower they usually much exceed in height, naked, erect, ascending or decumbent (*Bertol.*), wavy, terete, not striated, tubular but filled with loose cellular tissue within, slightly angulato-compressed, attenuated and glabrous near the base, higher up roughish with erect or

* These fibres are extremely strong; three of them only reach the apex of the leaf.

appressed white pubescence. *Spikes* solitary, simple, slender, terminal and cylindrical or ovato-oblong, drooping before flowering, then erect, and finally considerably elongated in seed. *Flowers* very numerous, densely imbricated, expanding in successive rings or belts from below upwards, sessile, each subtended by an ovate concave bract, of a green colour edged with white, about as long as the flower. *Calyx* as long as the tube of the corolla, deeply cleft into 4 broadly ovate, ribless, concave, very obtuse or rounded, scarious segments, with green strongly keeled backs and somewhat fringed tips. *Corolla* pale green or yellowish, the tube urceolate, faintly ribbed, very hispid below, the limb in 4 broadly ovate, scarious, pointed segments, purplish in the centre. *Stamens* much exserted; *filaments* glabrous; *anthers* bright yellow, oblong-sagittate, apiculate, their points purplish. *Germen* ovoid, glabrous, tapering into the style. *Style* long, tapering, quadrangular, rough chiefly in its superior part. *Capsule* much longer than the calyx, covered with the dry persistent corolla, brownish yellow, glabrous, rather acutely conical. *Seeds* 2, dark brown, plano-convex, oblong or elliptical, smooth, usually bordered unilaterally or at one end with a narrow white membrane or caruncle; *hilum* oval, depressed.

A much smaller and very narrow-leaved variety is mentioned by Withering as having been found by him in this island.

**** Leaves pinnatifid. Root annual.**

5. *P. Coronopus*,* L. *Buck's-horn Plantain. Star of the Earth.* "Leaves linear pinnatifid or toothed, scape rounded, bracteas ovato-subulate, lateral sepals with a ciliated membranaceous wing at the back, dissepiment of the capsule with 4 angles (thus forming 4 cells), cells 1-seeded."—*Br. Fl.* p. 339. *E. B. t.* 892.

In waste ground, and under walls about towns and villages, principally near the sea; common. *Fl.* June, July. ☉.

E. Med.—Abundant on Royal heath, and above Sandown bay, between Sandown and Shanklin, &c., 1844. Plentiful on the Dover at Ryde.

W. Med.—Most abundant and of luxuriant growth everywhere on the (green?) sand of the entire line of coast betwixt Blackgang and Compton bay, 1846.

Capsule very small, brownish or yellowish, slightly hairy, ovoid, mucronato-acuminate by the persistent base of the style, bursting by a central angular line of dehiscence; *placenta* 4-winged, forming 4 cells, but unconnected with the walls of the capsule, which hence is truly unilocular. *Seeds* one in each cell, but one or more often abortive, of an oblong or subelliptical shape, subcompressed, pale purplish brown, with a gray furfuraceous scaliness, and a narrow white wing or border at one extremity chiefly, often nearly obsolete; *hilum* round, depressed, central and lateral.

A few specimens of *P. Cynops*, L., were found on the Dover at Ryde, by T. Brown, Esq., in May, 1843, one of which he kindly presented me with.

* The linear segments of the pinnatifid leaves are thought to resemble a *crow's foot* as well as a *deer's horns*, hence the name of *Coronopus*.

Subdivision IV. *MONOCHLAMYDEÆ*.

"Flowers incomplete. Perianth single; in other words, the calyx and corolla forming but one floral covering, or altogether wanting."—*Br. Fl.*

Order LXIII. *CHENOPODIACEÆ*.

"Sometimes monœcious or polygamous. *Perianth* free, generally deeply cleft and without bractæas at its base. *Stamens* mostly 5 (in *Salsola* 2 or 1). *Stamens* from the base of the perianth and opposite to the segments: *anthers* 2-celled. *Ovary* 1, 1-celled, with a single *ovule*. *Style* divided, rarely simple. *Fruit* indehiscent (usually a *utricle*, sometimes a *berry*). *Seed* 1, at the base of the cell. *Embryo* spiral and without *albumen*, or curved round a farinaceous *albumen*. Herbs, rarely shrubs, without *stipules*. Flowers small, inelegant."—*Br. Fl.*

Tribe I. *SALSOLEÆ*.

"Seed with a simple integument. Embryo in a conical spiral. Stems continuous or jointed."—*SODEÆ*.—*Br. Fl.*

I. *SALSOLA*,* *Linn.* Saltwort.

"Flowers perfect, bracteated at the base. *Perianth* simple, inferior, 5-partite, persistent, enveloping the *utricle* with its base and crowning it with its *limb*, which has a broad scariose dorsal wing. *Stamens* 5. *Styles* 2. *Seeds* horizontal; integument simple, membranaceous"—*Br. Fl.*

Very closely related to *Chenopodium*, to which one of our two former British species is now referred; the present differs from that genus chiefly in the shape of the fruit, the dilated perianth and spiral cotyledon.

1. *S. Kali*, *L.* *Prickly Saltwort*. "Stems herbaceous prostrate, leaves subulate spinous scabrous, flowers axillary solitary, segments of the enlarged perianth cartilaginous as long as their spreading roundish wings."—*Br. Fl.* p. 352. *E. B.* t. 634.

On sandy sea-shores; frequent. *Fl.* July, August. ☉.

Plentiful on the spit below St. Helens, and on that at Norton. Sandown bay, *Mr. E. Lees* in *New Bot. Guide Suppl.*

* Name from *sal*, salt, and *solum*, soil, from the saline impregnation of the ground in which the species grow.

Herb very prickly and bushy, of a pale pellucid rather glaucous-green, brittle and succulent. *Root*, though annual, very hard, tough and woody, with fibres running far and wide in the loose sand. *Stems* numerous, in the small plants prostrate, much branched from the base, from a few inches to a foot or more, spreading in all directions, the central ones in large plants upright, the rest ascending or decumbent, rounded, bluntly angular and furrowed, striped with red and green or white and green, rough with short pellucid bristles, and filled internally with very loose white cellular tissue of great delicacy. *Leaves* numerous, awl-shaped, very succulent, scabroso-punctate, nearly cylindrical, obtuse, tipped with a short spine, their bases 3-nerved, compressed and dilated into a white membranous border, beset with small spines running to some distance along the leaf towards its point: as they ascend, the leaves become shorter, broader, with wider scarioso edges, the uppermost nearly triangular. *Flowers* solitary and sessile in the axils of almost every leaf and at the foot of the short lateral shoots springing from them, and also floriferous, each seated between two bracts like the leaves themselves, but smaller. *Segments* of the perianth at first erect, ovato-lanceolate, scarioso and acute, whitish or pale rose-colour; after flowering they become cartilaginous and enlarged, lying over and closely investing the seed. *Stamens* erect, inserted at the base of the germen and opposite to the segments of the perianth, with a greenish gland between each filament; *anthers* ovato-oblong, pale yellow. *Styles* combined for some distance upwards, 2 or 3, or rather there is but 1 style with 2 or 3 stigmas,* which, from their exceeding in length the undivided portion, have been counted as so many styles, though nothing like a coalition of separate parts can be perceived; *stigmas* roughish, spreading or recurved; *germen* subglobose, finely wrinkled or furrowed. *Seed* horizontal, depresso-turbinate, quite concealed by the connivent calyx-sepals, the points of which meet around and enclose the persistent style, and are at this period in many, though not in all, of the flowers furnished with membranous, flat and spreading prolongations of their substance at the margin formed by the inflexion of their apices, various in form and size, and have been justly observed as often wanting as present on the same plant, or but partially developed.

Tribe II. *SUÆDEÆ*.

"Seed with a double integument. Embryo in a flat spiral. Stem continuous."—*Br. Fl.*

II. *SCHOBERIA*, C. A. Meyer. Sea Blite.

"Flowers usually perfect, bibracteate at the base. Perianth 5-partite, at length inflated and often fleshy (without appendages or a wing at the back). Stamens 5. Style 0. Stigmas usually 3. Utricle covered by the perianth. Seed lenticular; integument double, outer one crustaceous. (Leaves semicylindrical)." — *SUÆDA*.—*Br. Fl.*

1. *S. maritima*, Mey. Sea Blite. "Leaves usually acute, styles 2, seeds reticulato-striated horizontal, stem herbaceous diffuse."—*Suæda*.—*Br. Fl.* p. 352. *Chenopodium*, L.: *E. B.* t. 633. *Chenopodina*, *Mog.*

* This is the view taken of our own and of the German species by Mertens and Koch.

β. Stems spreading, procumbent, almost woody; root biennial? *Wahl. Fl. Succ.* i. p. 160.

On muddy sea-shores, in salt-marshes and about the mouths of tide-rivers; very commonly. *Fl.* August, September. ☉ and ♂?

Brading harbour, and Newtown salt-marshes, abundant. Plentiful along the Medina between Cowes and Newport. Profusely in a salt-marsh meadow at Springfield, which is covered with this species exclusively, 1842.

β. In loose sand at Springfield, plentifully. Newtown marshes, as about Newtown Saltern, &c., abundantly.

Herb very smooth and succulent, of a pale subglaucous-green, changing in seed to a lurid purple or violet-red, from 6 to 18 inches high. *Root* whitish, tapering, flexuose, with a few branching fibres, tough and composed of several concentric layers of woody fibre. *Stem* 1 or more, roundish, striated, usually ascending at the base and somewhat woody, afterwards erect, at other times diffuse or prostrate, much branched, the branches alternate, erecto-patent, slender and nodding at the tips. *Leaves* numerous, alternate, sessile, linear, very soft, fleshy and succulent, ribless, flat on the upper side or slightly channelled, rounded and nearly semicylindrical below, pointing upwards and mostly a little incurved, rather bluntly pointed but not mucronate, scarcely attenuated at the base, the largest about an inch or an inch and a half in length. *Flowers* green, in little axillary clusters of about 3—5 together (sometimes solitary), small, sessile, the central flower with 2, the lateral with 3, minute scarious torn bracts, of an oblong or obovate shape and much shorter than themselves, to which they are closely applied. *Perianth* in 5 deep, concave, gibbous segments, with a broad, pale, membranous and rounded or very slightly pointed, erect border, depresso-connivent in fruit, furnished, according to Bertoloni, at the base externally with a thick fleshy scale or callosity, representing the foliaceous appendage to the same part in *Salsola*, but of which in the plant before us I can perceive no trace whatever, nor is any such appendage noted by the authors of the new edition of Röhlings's 'Deutschland's Flora.' *Stamens* opposite to and a little longer than the segments of the perianth; *anthers* large, yellowish, of 2 distinct roundish lobes. *Styles* 2, conical and united at the base, erect, much shorter than the stamens.

The whole plant turns dark red, purple or violet in decaying, and black in drying.

Both this species and *S. fruticosum* approach very nearly in character to *Salsola*, to which genus Smith has removed the latter but not the former, thus very unnaturally separating two plants having the most intimate relationship.

Tribe III. CHENOPODEÆ.

"*Embryo annular.*" "*Flowers uniform, mostly perfect. Stem continuous.*"—Br. Fl.

III. CHENOPODIUM, Linn. Goosefoot.

"*Flowers* usually all perfect. *Perianth* nearly uniform, usually 5- (sometimes 2—4) cleft, persistent and unaltered, or at length fleshy, closing upon the fruit. *Ovary* and *fruit* free from the perianth. *Seed* lenticular. (*Leaves* flat. *Bractes* under each flower none.)—Br. Fl.

1. *C. olidum*, Curt. *Stinking Goosefoot*. Leaves ovato-rhomboidal quite entire, spikes very short leafless, stems diffuse or prostrate. *Sm. E. Fl.* ii. p. 14. *Br. Fl.* p. 344. *Lynd. Syn.* p. 216. *E. B.* xv. t. 1034. *Curt. Fl. Lond.* fasc. 5, t. 20. *C. Vulvaria*, L.

Under walls, in waste and cultivated ground and rubbishy places, chiefly in suburban situations; very rare. *Fl.* July, August. ☉.

E. Med. — At the foot of a long wall at E. Cowes, rather abundantly. In the garden of "la Solitude," Ryde, but in very small quantity, *Dr. Bell-Salter*, 1845. Shown me by my friend the *Rev. Wm. Darwin Fox*, growing in his garden at Binstead, but very sparingly, and he suspected introduced by accident from seed brought by him out of Derbyshire.

Herb weak and slender, dull grayish green, covered with a granular mealiness. *Root* small, whitish, tapering, with a few slender fibres. *Stems* much branched from the very base, from a few inches to a foot or upwards in length, prostrate or ascending at the extremity. *Leaves* stalked, scarcely an inch long, ovato-rhomboidal, mostly bluntish, quite entire, 3 ribbed at the base, a little fleshy, covered, like the rest of the plant, with an unctuous mealiness of a most offensive odour, justly compared to that of stale salt fish, and permanently communicable by contact. *Flowers* very small, green, in little roundish crowded clusters, forming short, leafless, axillary and terminal, very mealy spikes. *Seeds* quite covered by the perianth, round, flattened, dark brown, shining and minutely dotted.

2. *C. polyspermum*, L. *Allseed Goosefoot*. "Leaves ovato-elliptical sessile, spikes axillary elongated subcymose." — *Br. Fl.* p. 345. *E. B.* t. 1480.

β. acutifolium. Stems partly erect or ascending; leaves ovate; spikes erect, leafy, scarcely branched. *C. polyspermum*, *Curt.* *C. acutifolium*, *E. B.* t. 1481. *Leight. Fl. Shrops.* p. 121, cum ic.

A frequent weed in kitchen- and other garden-ground, potato-fields, waste places, on ditchbanks, dung-hills, and in moist woods, &c. *Fl.* July, September. *Fr.* September. ☉.

E. Med. — Cultivated fields near Ryde, Binstead, and, I understand, a weed in the garden at Pondwell. Common on old manure heaps at Sandown. In gardens at Godshill, 1844. Abundant in 1844 at several places, as Godshill, Newchurch, Shanklin, America. Merston, plentifully, 1843. E. bank of the Medina, below Copping's bridge, *B. T. W.* [Very common at Hillway, Bembridge, *Dr. Bell-Salter*, Edrs.]

W. Med. — Wood near W. Cowes (Shambler's copse). Waste ground between Yarmouth and Shalfleet. Garden of the Shanklin (Williams's) hotel. By the lower farm at Ningwood. In Northwood park, sparingly, 1844.

β. "The var. *acutifolium* is the prevailing if not the only form of the plant with us in Hants."*

Herb quite glabrous in every part. *Root* annual, tapering, whitish or reddish, branched, with copious slender fibres. *Stem* erect, solid, various in height, from a few inches to 1 or 2 feet, green or purple, 4-cornered below, sharply angled, grooved and ridged above, mostly branching from the very base, the branches opposite, subopposite or alternate, simple or again ramified, ascending, spreading or divaricate, the lowermost becoming much elongated and quite prostrate or with their extremities ascending; on dung-hills and in rich ground very widely spreading and luxuriant. *Leaves* light, sometimes bluish or yellowish green, often edged with purple or suffused with that colour, on the disk and ribs underneath, somewhat lucid† but not shining, a little fleshy, pale and whitish beneath, strongly depresso-venose and wavy, with a minute mucronate point; extremely variable in size and shape on the same plant, with us for the most part ovate or from that to ovato-lanceolate, rounded, attenuated or rhomboidal at base; for the

* [*Bromf. in Phytol.* iii. p. 749. It is evident therefore that the stations in the text above must refer mainly if not exclusively to this form.—*Edrs.*]

† By lucid is here meant a certain transparency or brightness of appearance in the leaves by the partial transmission of light through them.

most part quite entire, but occasionally there is a tooth-like angle or two near the base, most commonly solitary or confined to one side, acute or very obtuse, with all gradations between the two extremes; in the latter case the apex of the leaf is rounded and retuse: in general however the more acute termination greatly predominates. *Petioles* variable in length, always much shorter than the leaves, rounded and caniculate by the decurrent erect margins of the former. *Stipules* none. *Flowers* numerous, in axillary, leafless, cymose clusters, minute and greenish, sessile, the form of inflorescence scarcely less variable in appearance than the leaves, and well described by Leighton in his admirable 'Flora of Shropshire.' I gladly avail myself of his own words in a great measure. *Racemes* cymose, axillary, nearly sessile, shorter than the leaves, simply or repeatedly dichotomous, each divarication having a sessile or pedicellate flower in the axil of the fork, leafless, but crowded on the branches in such a manner as to present the appearance of an elongated leafy spike. *Segments* of the *perianth* roundish or roundish ovate, concave, gibbous at the back, either very obtuse or slightly pointed; when in fruit either erect or converging over the seed, but not perfectly covering it. *Stamens* rather longer than the perianth; *filaments* flatish, broad, striate and pellucid; *anthers* pale yellow, large, of 2 globose lobes. *Styles* 2 or sometimes 3, short, recurved. *Seeds* horizontal, partially embraced by the perianth-segments,* orbicular-reniform, much depressed, purplish black, shining and minutely punctulato-striate, the circumference very obtuse or rounded (without a border). *Pericarp* close, wrinkled, greenish or purplish.

Our Isle-of-Wight plant is always the *C. acutifolium* of E. B., which, though considered on high authority as not distinct from *C. polyspermum*, L., is nevertheless accounted a good species by many continental writers. For excellent observations on this species see Leighton's 'Flora of Shropshire,' p. 121, whose remarks are in perfect accordance with my own made in this island.

3. *C. album*, L. *White Goosefoot*. Vect. *Lamb's Quarters*. "Leaves ovate inclining to rhomboid sinuato-toothed entire at the base, upper ones oblong perfectly entire, spikes branched somewhat leafy, seeds smooth shining somewhat keeled at the edge."—*Br. Fl.* p. 346. *E. B.* t. 1723.

In cultivated and waste ground, fields, gardens, by roadsides and on dung-hills; everywhere the most common and abundant species of the genus. *Fl.* July, August. *Fr.* September. ☉.

4. *C. glaucum*, L. *Oak-leaved Goosefoot*. "Leaves all oblong toothed and sinuated at the margin glaucous and mealy beneath, spikes erect nearly simple leafless, stigmas short, seed minutely reticulato-rugose."—*Br. Fl.* p. 346. *E. B.* xxi. t. 1454.

In low, rich, waste ground, about farm-yards and on dung-hills, but very rarely. *Fl.* August. *Fr.* September, October. ☉.

W. Med.—Abundantly on a piece of waste ground at Thorley, just outside of the farm-yard near the church, between that and the high road, 1837. Quite pro-cumbent on an old manure-heap at Swainston, 1839.

Amongst the most uncommon of the English species, occurring in but few places, chiefly, it is said, about London. *Root* fusiform, with copious fibres at the crown. *Stem* erect or quite prostrate, scarcely a foot high, often much less, obscurely angular, pale green, often beautifully striped with red, very smooth, shining and succulent, simple or slightly branched towards the base, the branches ascending. *Leaves* oblong, on rather short stalks attenuate at the base, deeply sinuate or erose, obtuse, or in the upper ones somewhat acuminate, dark

* Or according to some authors quite uncovered, the segments of the perianth spreading. In my specimens the segments are certainly connivent and conceal upon the seed, which however they are far from large enough to cover or close.

green above, beneath glaucous and covered with copious greasy mealiness. *Spikes* rather short, slightly branched and compound below. *Flowers* small, green, in numerous distant sessile clusters, in each of which the central flower is elevated on a very short and thick pedicel, the rest aggregated around its base. *Perianth* 3- or 4-cleft. *Seeds* small, blackish, flat or compressed, finely dotted, or, according to the excellent description of this species in Mertens and Koch's 'Deutschland's Flora,' wrinkled under a high magnifier, closely enwrapped by the thin pellicular perisperm and the mostly 3-cleft perianth. A few seeds in each cluster are often vertical, but the greater part are horizontal. The figures in 'English Botany' and 'Flora Danica' have the leaves much more acutely sinuate than in my very numerous specimens, in all of which the sinuosities leave blunt intermediate lobes, suggesting the idea of oak-leaves, to which indeed they bear a strong general resemblance.*

5. *C. murale*, L. *Nettle-leaved Goosefoot*. "Leaves shining ovate approaching to rhomboid acute sharply toothed entire at the base, spikes divaricately branched cymose leafless, seeds opaque dotted, their edge obtuse and not keeled." — *Br. Fl.* p. 345. *E. B.* t. 1722. *Fl. Dan.* xii. t. 2048.

In waste places about towns, under walls, on rubbish, dung-hills, and in neglected gardens, but not general. *Fl.* July, October. *Fr.* September—November. ☉.

E. Med.—At E. Cowes in several places, sparingly. Frequent at Newchurch, at the vicarage and elsewhere, 1841. Sandown, *Mr. W. D. Snooke*. Under the rocky cliff on the right-hand side of the road from St. Lawrence to Niton, a little beyond the turning off to Whitwell, in plenty, growing with *Beta maritima*, *Miss Hadfield*!

W. Med.—In Northwood park, very sparingly, 1844. At Yarmouth and Ningwood. Newport, Freshwater, &c., in plenty, *Mr. W. D. Snooke* in *Fl. Vect.* Probably *C. urbicum*, var. *intermedium*, has been gathered for *C. murale* at the two last-mentioned places.

Root tapering, long and slender. *Stem* 1—2 feet high, much branched, obscurely angular, striated, green or reddish, erect or reddish. *Leaves* dark or often bright green, smooth, thick and more or less shining, ovate or ovato-lanceolate, somewhat rhomboidal, acute, variously but deeply and sharply toothed, the teeth pointing forwards, attenuated at the base into moderately long petioles; scarcely if at all mealy: the lower leaves, which are largest and broadest, have somewhat the look of those of the nettle. *Spikes* axillary and terminal, leafless or very nearly so, spreading, much branched in a paniculate or cymose manner. *Flowers* rather large, in small, roundish, sessile clusters, greenish, and covered with a mealy or rather crystalline efflorescence, though this is almost wanting on the stem and leaves. *Perianth* cleft, the segments obtuse, with a blunt prominent keel. *Seed* tunicated, dull black, orbicular, much compressed, with a narrow rim or border, minutely rugoso-punctate, almost wholly covered by the closely investing perianth, rather larger than in *C. urbicum*, horizontal.

The smell of this plant is slight but unpleasant; the stem and leaves are often a fine red.

Native or naturalized in America. I have gathered it at Philadelphia, and observed it extremely common at Norfolk in Virginia, beyond which to the northward I have not remarked it.

6. *C. urbicum*, L. *Upright Slender-spiked Goosefoot*.

β. *intermedium*. *C. intermedium*, *M. et K.* Leaves triangular, toothed; spikes long, erect, approaching the stem, subsimple, nearly leafless, their clusters remote or scattered; seeds horizontal, rough, tightly coated. *Sm. E. Fl.* ii. p. 10. *Br. Fl.* p. 345. *E. B.* x. t. 717. *Lind. Syn.* p. 215.

* Called *Rand's Oak Blite* on this account by Petiver, &c.

γ. Spikes cymosely branched.

On rich waste ground, dung-hills, village-greens, and especially in or about farm-yards; frequent and general throughout the island. *Fl.* August, September. ☉.

E. Med.—β. Abundant at Troublefields and at Ninham farms, near Ryde. Farm-yard at Palmer's near Wootton. Common on St. Helens green, and at Sandown, about the cottages and farms. At Ventnor and Niton. Moist ground by Little Whitefield farm, 1844. Plentiful in the farm-yard of Upper Morton, by Brading, 1849. In a farm-yard at Adgeton, in plenty, and very luxuriant, 1849. At Arreton, Hasely, Lower Rill, and other places, in plenty.

W. Med.—β. By Yafford mill. Grange, by Brixton. At Chillerton. Compton farm, and Brook-house farm-yards.

γ. Near Yaverland farm, in the road leading down to the marshes. In the farm-yard at Sweepwash, Appuldurcombe. At Yafford mill, near Shorwell.

Stem 1—3 feet high, erect or ascending, obtusely angular, green or reddish, smooth, shining and flexuose, sometimes a little branched at the base, more usually simple: the main stem terminates in a very compound pyramidal spike, the branches of which are panicle, more or less diverging and quite leafless. *Leaves* triangular, sinuato-dentate, with sharp teeth a little pointing forwards or hooked, wedge-shaped at the base, with 3 principal very prominent ribs, of a rather dark green above, a little shining, somewhat thick and fleshy, mostly with some degree of mealiness beneath: the leaves become less toothed or nearly entire as they approach the summit. *Spikes* upright, at first short and thick, much lengthened out as the seed ripens, compound chiefly towards the base, with a few leaves interspersed for about $\frac{1}{3}$ rd the length of the lowermost spikes, and which gradually diminish in frequency on those above them, wholly disappearing on the uppermost spikes, which are subtended by the single leaf only, from the axil of which they spring. *Flowers* green, in small, globular, rather remote clusters, all 5-cleft, and, as far as I can find, perfect.* *Seed* dark brown, nearly black, horizontal, covered by the connivent perianth, 4 or 5 times as large as in the next species, orbicular, compressed, but less so than in *C. rubrum*, hence rather lenticular, the periphery rounded, minutely rugoso-punctulate and highly polished when freed from the very close, rough, friable pericarp.

The var. γ. I have never seen in fruit. It has the aspect of small specimens of *C. urbicum*, except that the leaves are much less regularly toothed, the teeth fewer and mostly confined to the lower half of the leaf, where there is for the most part one very large; the uppermost leaves are nearly entire; flowers in axillary and terminal racemes, quite leafless, branched in various degrees, almost as much cymose in one specimen as in *C. murale*. Mr. G. E. Smith has observed the same variety in Sussex, but I suspect it to arise from a diseased state of the plant, having never seen this form of inflorescence in large vigorous plants, but only on small, discoloured, unhealthy specimens. It has come up in the garden at St. John's, from seed, I believe, of the common form; nor is the same transformation of the inflorescence from the simple spicate to the subcymose character complete in these casual specimens.

The much larger seeds distinguish this species from *C. rubrum*. Gaudin's description is excellent, agreeing exactly with our plant, which is faithfully depicted in E. Botany, excepting that the clusters of flowers are more remote in the figure, but in this respect there is a great variation. Our Isle-of-Wight plant seems to be always the *C. intermedium*, Mertens et Koch, separated originally from *C. urbicum* by a nice distinction without a difference, and since repudiated by its surviving author in his Syn. Fl. Germ. et Helv.

* Besides the vertical position of the seed, Mertens and Koch assert the flowers of *C. rubrum* to be 3-parted, with one or two stamens, the central flower only of each cluster 5-cleft.

7. *C. rubrum*, L. *Red Goosefoot*. Leaves triangular somewhat rhomboidal deeply toothed and sinuate, spikes erect compound leafy, their clusters crowded, seed very minute vertical smooth loosely coated. *Sm. E. Fl.* ii. p. 11. *Br. Fl.* p. 346. *Lind. Syn.* p. 215. *E. B.* xxiv. t. 1721.

In low moist manured or muddy places, farm-yards, on dung-heaps, the margins of ponds, and spots where water occasionally stands, also in salt-marshes (*Bab.*); a very uncommon species in the island. *Fl.* July—October. ☉.

E. Med.—On the half-dried-up margins of the pond by Hardingshoot farm, in very great plenty, 1844. A plant or two on a manure-heap at Gatehouse farm.

W. Med.—On a manure-heap by the roadside near Ningwood green, in considerable plenty, 1845. Freshwater gate, *Mr. W. D. Snooke*. It is very possible this species may have grown in the last-mentioned station, but I have never succeeded in finding it there, and till its discovery in the island in 1844 was inclined to the opinion that the foregoing is the plant intended for *C. rubrum*, which in many places, though not with us, is a far commoner species than *C. urbicum*.

Root annual, tapering, with several stout, pale, branched fibres. *Stem* erect, ascending or sometimes procumbent and even prostrate, furrowed and angular, filled with a white spongy pith, mostly striped with dark green and bright red or purple, very leafy, alternately and often copiously branched from the base, the lower branches, at least in the decumbent variety, widely divaricate, ascending and procumbent below, those higher on the stem and at its summit more or less erect or patent, becoming gradually shorter, giving a tapering or pyramidal outline to the entire plant. *Flowers* minute. *Seed* completely concealed by the persistent perianth, deep reddish brown, orbicular, but somewhat inclined to ovate and pointed, much flattened and subcochleate, with rounded obtuse periphery, shining and smooth or slightly wrinkled only, similar to that of *C. urbicum*, but rather thinner and scarcely exceeding $\frac{1}{4}$ th its size, not exceeding a moderate grain of sand; that of the terminal and 5-cleft flower of each cluster horizontal, the rest vertical, all covered with a thin pellicle, which is much smoother, paler and looser than in *C. urbicum*.

It is now admitted that the *C. botryodes* of Smith is merely a procumbent variety of *C. rubrum*, very similar to, if not identical with, the form of that species we have just been describing.

Gaudin (*Fl. Helv.*) remarks the extreme rarity of this species in Switzerland.

The plant which goes under this name amongst the American botanists, and which I have gathered in the suburban streets and on the vacant lots of Philadelphia, appears to be very different from the *C. rubrum* of Europe, and makes a certain approach to *C. urbicum* in the slender, erect, somewhat branched and mostly leafless racemes, that bear a few small leaves amongst the lower clusters alone. This plant has likewise much of the aspect of *C. anthelminticum* in the inflorescence, but is quite destitute of the strong smell of that species. It is more branched and spreading than either this last or *C. urbicum*, or indeed in any of the upright forms of the European *C. rubrum* that have come under my own notice.

8. *C. Bonus Henricus*, L. *Good King Henry*. *Wild Spinach*. *English Mercury*. Leaves triangulari-sagittate somewhat hastate mostly quite entire, spikes compound terminal and axillary erect leafless, seed vertical smooth. *Sm. E. Fl.* ii. p. 9. *Br. Fl.* p. 347. *Lind. Syn.* p. 215. *E. B.* xv. t. 1033. *Curt. Fl. Lond.* fasc. 3, t. 17.

On waste ground, village-greens, by roadsides and about farm-yards; rather unfrequent. *Fl.* May, June (and partially through the summer). 24.

E. Med.—Farm-yard at Ninham, near Ryde. Abundant in Apse farm-yard.

Rew farm, near Appuldurcombe. Field near Quarr abbey, 1849. Arretton. Shanklin. [Near Bembridge, A. G. More, Esq., Edrs.]

W. Med.—Wellow. Gottens.

Root thick, fleshy. *Stems* several, about a foot high, roundish, striated, mealy like the leaves with minute, round, crystalline grains on short hair-like pedicels. *Leaves* dark green, alternate, on long petioles, triangular or somewhat hastate, often with one or two lobe-shaped teeth on each side at their base, otherwise quite entire, their edges wavy and having a fat or unctuous feel from the copious mealiness on their veined under surface. *Spikes* terminating the stem and branches, very long, tapering, compound, leafy near the base only, quite leafless above. *Flowers* densely crowded in small sessile clusters, greenish or reddish. *Segments* of the *perianth* concave, somewhat pointed, bordered with an abrupt membrane. *Stamens* wanting in some flowers (*Sm.*) *Styles* long, spreading, usually 2, but flowers with 3 are often intermixed. *Seed* large, vertical (with its edges upright), lenticular and subreniform, not bordered, reddish brown, very smooth and shining when divested of the extremely fine and close pellicle and the somewhat loose, reticulated, wrinkled pericarp, embraced but not concealed by the *perianth*-segments.

This species is remarkable for being perennial, unlike the rest of the genus, which are annual. It has much of the habit of *Amaranthus*, and resembles spinach in general appearance, for which it was formerly a valuable substitute. The succulent bitterish herbage does not seem inviting to any of our domestic animals, as we find it growing uncropped in places the most frequented by them.

IV. BETA, Linn. Beet.

"*Perianth* single, 5-cleft, persistent. *Stamens* 5. *Utricle* reniform, imbedded in the fleshy base of the calyx."—*Br. Fl.*

1. *B. maritima*, L. *Sea Beet*. *Vect. Wild Spinach*. "Stems erect or procumbent at the base angled branched, spikes longish narrow somewhat erect leafy paniced, flowers 1—4 together sessile when in fruit 2—3 cohering, segments at length keeled and inflexed at the summit."—*Br. Fl.* *E. B.* t. 285. *B. vulgaris*, *Br. Fl.* p. 344.

On the sea-beach, in muddy salt-marshes, on old walls and waste ground along the shore, on most parts of the coast abundantly. *Fl.* August, September. 24.

E. Med.—Frequent at Ryde, Cowes, &c. Between Springfield and Sea View, in plenty. Under the rock in the highest part of the Undercliff, nearly behind St. Lawrence, at a considerable distance from the shore.

W. Med.—Plentiful at Yarmouth.

Dr. Bell-Salter tells me the flowers of the Sea Beet are very fragrant, the odour being like those of almonds and new-made hay united.

Boiled instead of greens, the Sea Beet is much relished by the poorer classes of this island.

Tribe IV. SALICORNEÆ.

"*Embryo* annular." "*Flowers* uniform, perfect. *Stem* jointed."—*Br. Fl.*

V. SALICORNIA,* Linn. Glasswort.

"*Perianth* single, turbinate, fleshy, obscurely lobed, imbedded in an excavation of the *rachis*. *Stamens* 1—2. *Style* short.

* Name from *sal*, salt and *cornu*, a horn; in allusion probably to the branched and naked stems, like anthers, and the saline soil in which the species grow.

Stigmas bi-trifid. *Fruit* a *utricle*, included in the enlarged perianth."—*Br. Fl.*

1. *S. herbacea*, L. *Jointed Glasswort*. *Saltwort*. *Sea Samphire*. Stem herbaceous, articulations compressed somewhat thickened upwards and notched, spikes cylindrical slightly tapering at the extremity.

a. Stem erect. *S. annua*, *E. B.* vi. t. 415. *S. herb.*, *Sm. E. Fl.* i. p. 2. *Br. Fl.* p. 350.

β. Stems prostrate. *S. procumbens*? *Sm. E. Fl.* i. p. 2. *E. B.* xxxv. t. 2475? In muddy salt-marshes; abundant. *Fl.* August, September. ☉.

On each side of the Medina above Cowes; shores of the Wootton river, and about the Yar; salt-marshes at Brading, Newtown, &c., abundantly.

β. Muddy shore of Yarmouth harbour. Abundantly with *a.* in the Newtown salt-marshes, as by Newtown saltern, &c.*

A very smooth, succulent, jointed and leafless herb. *Root* whitish, stout, tapering, more or less branched, often nearly simple, of a hard woody texture, though annual, composed, like that of *Schoberia maritima*, of numerous concentric layers of ligneous fibre. *Stem* from 5 or 6 to 12 inches high, oppositely and in the larger plants copiously branched from the bottom, the lowermost branches ascending or even procumbent at the base, where, like the main stem, they are obtusely quadrangular, almost woody and covered with a thin grayish brown cuticle, succulent above and composed of successive subcompressed or nearly cylindrical articulations, a little thickened upwards and slightly notched or 2-lobed at the summit, where a socket is formed for the articulation immediately succeeding, and sheathing the pair of short, opposite and nearly erect branches bearing the flowering spikes.

I hardly know how this is to be distinguished from *S. radicans*, excepting by its more herbaceous texture, yet Mr. Borrer is of opinion they are really distinct species. The erect variety of *S. herbacea* abounds all along the Yar, and is conspicuous at a distance from its lively green colour, which in the common form is commonly softened down by an admixture of yellow or reddish brown.

This species, with others of the same genus and of *Salsola*, yields by combustion the *Barilla* of commerce, from which soda is extracted for glass-making and other purposes, whence the English name. The shores of the Mediterranean produce the greatest quantity both of the wild and cultivated plants, but at the present day is far less in request than formerly, as much of the soda employed in the arts is obtained more economically by the decomposition of common salt.

2. *S. radicans*, Sm. *Creeping Glasswort*. "Stem woody procumbent and rooting, articulations compressed spreading and notched at the top scarcely thickened, spikes oblong obtuse."—*Br. Fl.* p. 351. *E. B.* t. 1691.

In similar situations with the preceding, from which I fear it is not specifically distinct. *Fl.* August, September. 24.

E. Med.—On the Dover, Ryde, [Brading harbour, *A. G. More, Esq.*, Edrs.]

W. Med.—By the Medina above W. Cowes, on the edges of the little salt-pools left by the ebbing of the tide. Abundant in Newtown salt-marshes.

Sir W. Hooker justly observes that this species "scarcely differs from the preceding except in its more branching, straggling, and *perennial* stem, quite woody

* "A large state of this plant, 1—2 feet high, with a woody stem, and much resembling *S. fruticosa*, L., occurs in the salt-marshes near Portsmouth. Professor Don however considers it merely as a (*perennial*?) form of *S. herbacea*."—*Macreight, Man. of Br. Bot.* p. 195. Is this the *S. fruticosa* of Sm. *Engl. Fl.* i. p. 3?

below, often growing at the edge of a low muddy bank, and depending from it." It is indeed difficult to point out any character from the upper part of the stem or the organs of fructification discriminative of the two plants, though the root of *S. radicans*, which is ligneous and creeping extensively, is very different from the attenuated almost fusiform one of *S. herbacea*, and which is of a whitish or pale colour, not black as in the former. The two kinds grow intermixed in precisely similar conditions of soil and situation, which seems to favour the supposition of their being distinct, though, as in many other instances, so closely resembling one another in those parts from whence specific characters are usually derived, as to induce a doubt of the permanency of all minor differences, however remarkable. Many plants naturally annual in cold climates become occasionally perennial in warmer ones; and may it not happen in this instance that such plants of *S. herbacea* as have from any cause survived the first winter may acquire in the succeeding summer a ligneous character, enabling them to brave the rigour of several returning seasons?

Tribe V. ATRIPLICEÆ.

"Embryo annular." "Flowers imperfect. Stem continuous."—
Br. Fl.

VI. ATRIPLIX,* Linn. Orache.†

"Perigone of 2 more or less connected parts. Stigmas 2. Pericarp membranous, free. Testa crustaceous. Seed vertical, attached by a lateral hilum, either near the base or by means of an elongated funiculus in the middle of the side. Radicle basal. Stamens 5."—*Bab. Man.*

* "Monœcious; fem. flower bipartite."—*Bab.*

1. *A. littoralis*, L. Grass-leaved Orache. "Stem erect, leaves linear-lanceolate entire or rarely toothed, perigone of the fruit ovato-rhomboid, acute toothed tubercled on the back spreading."—*Bab. Man.* p. 268. *Bab. Mem. of the Brit. Atrip. in Trans. of the Edinb. Bot. Soc.* p. 5. *Bab. Prim. Fl. Sarn.* p. 81. *E. B. t.* 708. *Br. Fl.* p. 349.

On the muddy beach, upon banks and along ditches by the sea, in salt-marshes, &c. Not uncommonly. *Fl.* July—September. ☉.

E. Med.—On the sea-beach between Ryde and Binstead, but not very abundantly, 1844. Most abundantly on the shore between Springfield and Nettleston fort.

W. Med.—By the Medina above Cowes, at Medham brickfield. Thorness bay and Newtown marshes. Under the shore nearly below Bouldner. Coast near Cowes and most other parts of the coast, *B. T. W.*

Root whitish, tough, composed of numerous concentric woody layers, much branched and fibrous. Stem erect, sharply angular and furrowed, flexuose, commonly streaked with purple, 2 or 3 feet high, branched from the base, the branches lax, divaricate, spreading or somewhat erect, the lowermost decumbent, ascending and opposite, those higher up alternate. Leaves very narrow, linear-lanceolate or

* See 'Monograph of the British Atriplices,' by Charles C. Babington, *Trans. of the Bot. Soc. of Edinb.* i. p. 1.

† Arroche, *Fr.* The English was formerly often spelt Arrach or Orrach.

linear-oblong, nearly erect, dull glaucous-green, smooth and fleshy, tapering into short petioles, entire or here and there sinuato-denticulate, often, as are the upper part of the stem and branches, with a scale-like mealiness beneath. *Flowers* in roundish sessile clusters that are partly distinct and partly crowded on the upper portion of the branches, forming long, simple or compound, interrupted leafy spikes, disposed in a paniculate manner, each head or cluster containing from 4 or 5 to 12 or more flowers (*Bab.*), and powdered with crystalline grains: the lower clusters of each spike are usually distinct or interrupted, and furnished with a leaf or bract at the base, those at and towards the summit approximate, or even crowded and leafless or nearly so. *Staminate flowers* without even the rudiment of a germen. *Anthers* reddish. *Valves* of the seed-bearing perianth usually divergent in fruit, thick and fleshy, ovato-rhomboidal, sinuato-dentate or edged with tubercles, the apex acute, muricato-tuberculate at the back, two of the tubercles generally larger and more prominent than the rest, sometimes cleft or double. *Seed* rather large, orbicular, much compressed, reddish black, its surface faintly waved or wrinkled, covered with the close filmy pericarp.

"Distinguished from the next by the form of its open perigone and leaves usually entire."—*Bab. Man.*

2. *A. marina*, L. *Marine Orache*. "Stem erect, leaves ovato-lanceolate irregularly toothed or rarely entire, perigone of the fruit oboordato-triangular obtuse tubercled on the back closed."—*Bab. Man.* p. 268. *A. littoralis* β , *Br. Fl.* p. 350.

With the last, and probably not rare, but, having till lately been accustomed to look on it as a tooth-leaved variety of *A. littoralis*, I find no station recorded for it apart from the last. "*Fl.* July—Sept. ☉."—*Bab.*

"Distinguished by its toothed leaves and form of the closed perigone. These two (*A. littoralis* and *A. marina*) never have lobed leaves like the succeeding species."—*Bab.*

Perhaps not specifically distinct from *A. littoralis*, but the closed perigone instead of the open one (when in seed) of the latter may, if constant, be allowed to weigh in favour of their separation.

3. *A. angustifolia*, Sm. *Spreading Narrow-leaved Orache*. "Stem erect or prostrate, leaves lanceolate entire, lower leaves with 2 ascending lobes from a wedge-shaped base, perigone of the fruit rhomboidal acute, lateral angles smooth on the back and longer than the fruit and collected into nearly simple interrupted spikes, seeds smooth and shining."—*Bab. Man.* p. 268. *E. B. t.* 1774. *Br. Fl.* p. 349.

In waste ground, fields, gardens, by roadsides, &c.; very common everywhere. "*Fl.* July—October. ☉."—*Bab.*

Root whitish, slender, in the larger plants copiously branched and fibrous. *Stem* erect (or prostrate, *Bab.*), more or less quadrangular or somewhat rounded, emitting many opposite and alternate, long, slender branches from the very base, the lowermost decumbent, prostrate or ascending, those higher up widely spreading or patulous. *Leaves* shortly stalked, bluish or grayish green, thin and flexile, lanceolate or linear lanceolate, entire and wavy on the margins, the uppermost very narrow; lowermost more or less hastate, with one or a pair of tooth-like lobes pointing forwards a little above their wedge-shaped base, the rest of the leaf being either entire, toothed or sinuate: sometimes all the leaves are entire, or a few of the middle ones alone are slightly lobed and toothed. *Flowers* in small, roundish, sessile clusters, forming slender, axillary and terminal, naked (or in their lower part slightly leafy), simple or subsimple, interrupted spikes, the highest clusters of which are more or less crowded, the lower in the longer spikes considerably wide apart. *Perigones* hastato-rhomboidal, the middle lobe triangular, acute and elongated, entire, the two lateral angles acute, prominent and pointing forwards, the

back of each valve smooth or furnished with a pair or two of pretty large and prominent tubercles, the same being absent or of small size on some one or more of the flowers even in the same cluster: these tubercles are admitted to exist by Smith, Mertens and Koch.

? 4. *A. erecta*, Huds. *Upright Orache*. "Stem mostly erect with ascending branches, lower leaves ovato-oblong with two ascending lobes from a wedge-shaped base irregularly sinuato-dentate, upper leaves lanceolate entire, perigone of the fruit rhomboidal denticulate acute more or less muricated on the back and scarcely longer than the fruit and collected in branched dense many-flowered spikes, seeds smooth and shining."—*Bab. Man.* p. 268. *E. B. t.* 2223. *A. angustifolia* β, *Br. Fl.* p. 349.

No doubt a native of the Isle of Wight, as Mr. Babington says it is common on cultivated land. "*Fl.* July—Oct. ☉."—*Bab.*

"Distinguished by its leaves, compound densely flowered spikes, and smooth shiny seeds."—*Bab.* With my present imperfect knowledge of these protean plants, I probably confound this and the next together.

5. *A. patula*, L. *Spreading Halberd-leaved Orache*. Stem mostly erect or spreading, lower leaves ovato-hastate with two horizontally spreading lobes denticulate, upper leaves nearly entire, perigone of the fruit triangular-rhomboidal nearly entire slightly muricated on the back and collected into nearly simple interrupted spikes, seeds opaque rough."—*Bab. Man.* p. 269. *Br. Fl.* p. 348. *E. B. t.* 936. *A. hastata*, Sm.

β. Leaves fleshy.

In waste and cultivated ground, on dung-hills, &c.; common. *Fl.* June—October. ☉.

β. On the sea-beach betwixt Ryde and Binstead. By the shore of Brading harbour, near Carpenters, &c. Plentiful on the shore N. of Shanklin chine.

The var. β. is a large, straggling, prostrate or decumbent plant, with broadly triangular or hastate leaves, more or less white or hoary with crystalline efflorescence. I have not yet carefully examined it, as it perhaps deserves, having been accustomed to esteem it a sea-side form of *A. patula*, and now suppose it to be the *A. prostrata*, Bouch. ? of Babington's Manual. If so, it would seem from Mr. Babington's account to be rare in Britain; in this island at least it is very abundant. I suspect it is the *A. hastata* of Wahlberg's 'Flora Suecica,' 2nd edition, p. 683, and perhaps of Linnæus himself, *Fl. Suec. edit. 2*, No. 921.

6. *A. rosea*, L. ? *Spreading-fruited Orache*. "Stem spreading procumbent or ascending with spreading branches, leaves mealy ovato-triangular somewhat 3-lobed unequally sinuato-dentate, upper ones lanceolate dentate and 3-lobed at the base or nearly entire, perianth of the fruit rhomboid acute toothed with 2 irregular rows of tubercles on the back, spikes axillary and terminal few-flowered, seeds tubercular rugose."—*Bab. in E. B. S. t.* 2880. *Br. Fl.* p. 348.

Waste places, &c.; I believe very common. *Fl.* July—September. ☉.

E. Med.—Shore between Ryde and Binstead, with *A. hortensis*, 1845. Abundant on the Dover, Ryde, and between Ryde and Nettleston, *C. C. Babington, Esq.*, 1845.

I find between Springfield and Nettleston Old Fort a plant which may possibly be *A. rosea* β. *prostrata*, *Bab.* It agrees in almost every particular with the

description of Babington, Koch ('Deutschland's Flora') and others, as far as so confessedly variable a species of a most variable genus can be expected to do. The leaves are not however as Koch describes them, silvery white beneath; nor are the leaves and enlarged calyx-valves beautifully reticulated; the stem too is quite prostrate, not erect or even diffuse.

7. *A. laciniata*, L. *Frosted Sea Orache*. Stem spreading procumbent with spreading branches, leaves triangular-rhomboidal lacinated mealy beneath, spike of male flowers dense leafless, fertile flowers axillary, perigone of the fruit rhomboidal 3-lobed with the lateral lobes truncate the back 3-ribbed, the 2 lateral ribs often terminating in tubercles, seeds rough opaque.

On sandy sea-beach, but not common. *Fl.* July, August. ☉.

E. Med.—On the extreme point of the spit at St. Helens, sparingly. Ventnor cove. In Sandown bay, near the Shanklin end, but very sparingly, 1842. Rather frequent on the shore between Shanklin and Sandown, 1844. Shore between Sea View and Brading, *Wm. Wilson Saunders, Esq.*

W. Med.—Spit at Norton, by Yarmouth, in tolerable plenty.

Herb fœtid like *Chenopodium olidum*, but in a less degree. *Perigones* (enlarged valves) of the fruit silvery gray, blackish within, rhomboidal, uneven, gibbous at the back, 3-lobed, the middle lobe deltoid, thin and flat, acute, the two lateral broadly truncate, all entire or with the latter slightly toothed occasionally; back of each valve with 3 often indistinct prominent ribs, and with or without one or a pair of tubercular muricate processes of irregular size and shape on their convex summit. *Seed* vertical, very large, greenish or yellowish brown, roughish and opaque, ovato-orbicular, the periphery rounded, covered with the fine, wrinkled, loose pericarps. *Embryo* curved round the snow-white mealy albumen.

I find the plant in this island attacked by some insect, which perforates the perigones on their under side, and devour the seeds entirely.

Amongst the peculiar characters which distinguish this species, are the silvery scaliness of the leaves, especially beneath, like those of *Halimus*, and quite different from the mealy efflorescence of the other genuine *Atriplices*; also the pale yellowish or reddish rounded stems, which are but obscurely angular or striate as compared with the other species. It appears to be found only on the sea-shore in England, but occurs in the heart of Germany and other continental countries, as Galicia, &c.

"** *Polygamous*; *fem. flower bipartite to the base, seed vertical*; *perfect flowers 3—5 parted, seed horizontal*."—Bab.

* 8. *A. nitens*, Rebent. *Shining-leaved Orache*. Stem erect, leaves triangular-cordato-hastate sinuato-dentate shining above glaucous beneath, upper leaf elongato-triangular, perigone of the fruit ovato-acuminate entire separate to the base.

Fields and waste places; not completely naturalized. *Fl.* (July?) August, September. *Fr.* (Aug.?) September, October. ☉.

E. Med.—On the shore between Ryde and Binstead at intervals, for more than a quarter of a mile, 1845. A specimen found several years since at Sandown, on a manure-heap. A single tall plant in the corner of a field betwixt Quarr abbey and Ninham, growing amongst burdock, poppies and other field-weeds, 1848. I have also received specimens from *Mr. Thos. Meehan, jun.*, from waste and cultivated ground at St. Clare, where, I understand, it was introduced into the kitchen-garden, about fifteen years ago, by the late Lord Vernou, and its cultivation continued for about three years, since which time it has maintained its footing there as a weed.

Root annual, whitish, fibrous and tapering. *Stems* 2 to 4 or 5 feet high, bluntly quadrangular, furrowed, (not much?) branched. *Perigone* of the pistil-

late flowers very much enlarged in fruit, thin (not, as in most others of the genus, fleshy), when fully ripe dry, whitish, membranous and reticulated with prominent veins, very broadly ovate or nearly orbicular, rounded or slightly pointed, with flat compressed margins, which are quite entire and closely applied to each other; somewhat convex at the back, and wholly without tubercular prominences or inequalities of any kind, entirely free (not imbedded in fleshy tissue) or distinct and subpedicellate. *Seed* large, vertical, orbicular, much compressed, quite free.

VII. HALIMUS, Wallroth. Sea Purslane.

"*Perigone* of two parts connected at the extremity, 3-dentate, wedge-shaped below. *Stigmas* 2. *Pericarp* very thin, ultimately adhering to the tube of the perigone. *Testa* membranous. *Seed* vertical, pendulous from an elongated funiculus. *Radicle* terminal. *Stamens* 5."—*Bab. Man.*

Shrubs or small trees of maritime or saline soils, rarely of inland or mountain localities.*

1. *H. portulacoides*, Wallr.. *Lesser Shrubby Orache. Sea Purslane.* Stem shrubby, leaves obovato-lanceolate entire silvery white, perianth of the fruit very shortly stalked inversely triangular rounded below 3-toothed at the apex. *Atriplex*, L.: *Br. Fl.* p. 347. *E. B. t.* 261. *Obione, Mog. Guimb. und Hayne, Abbild. der Deutsch.* ii. 277, t. 209. *Fl. Dan.* xi. t. 1889.

In muddy salt-marshes, along the oozy sides of tide-rivers, ditches and creeks, also on sea-cliffs; abundantly. *Fl.* August, September. *Fr.* November. *h.*

E. Med.—Muddy banks of the Wootton river, 1845. [By the sea-wall at Apley, and on the muddy shore of Brading harbour, frequent, *Dr. Bell-Salter, Edrs.*]

W. Med.—Banks of the Medina above Cowes, in plenty. Fringes the edges of the brine-pits in the salt-marshes about Newtown. Chalk-cliffs at the W. end of Scratchell's bay, at a great elevation. In Gurnet bay, abundantly, but of small growth.

Root woody, somewhat creeping (*Sm*). *Stem* shrubby, roundish, covered with a reddish gray bark, much branched, the branches angular, opposite, ascending or procumbent, often depending from a low bank, as a dense tangled bush, about a foot or 18 inches high. *Leaves* opposite, with mostly a pair or two of smaller ones in their axils, various in breadth, obovato-lanceolate, more or less rounded or obtuse at their extremity, the lowermost nearly ovate, tapering into channelled footstalks, of a thick fleshy texture, hoary on both sides with a leaden-gray leprous scaliness, but not with detached grains or mealiness as in the true *Atriplices*. *Flower-spikes* terminal and in the axils of the uppermost leaves only, short, leafless, each of several little, interrupted, sessile tufts of crowded brownish or reddish yellow barren and fertile flowers: *fertile flowers* reddish, the *calyx* much thickened; *styles* 2, erect, pale red and downy, protruded: *barren flowers* all with

* The Great Shrubby Orache (*Halimus*,—*Atriplex Halimus*, Linn.), so frequent in our English gardens and pleasure-grounds, I observed to be plentiful in the wild state in Syria and Palestine, and that, to my surprise, not merely on the sea-coast or in low salt ground, but abundantly likewise on dry limestone mountains of Judæa, and in the parched rocky valleys that intersect them, at a great elevation above the sea, as well as at their base. It abounds, for instance, on the eastern slope of the hills between Jerusalem and the Dead Sea, on the way thither both by Jericho and Mar Saba, but it is only on the low saline plains and by the sea-side that it attains its amplest dimensions, as on the flat salt ground between Jericho and the Jordan, and at Jaffa, where it forms bushes often of immense size.

a rudimentary germen in my specimens, but no style; *anthers* yellowish, of two rounded divergent lobes.

I have not succeeded in finding any perfectly hermaphrodite flowers in this species.

In E. B. the leaves are represented acute, a variation from the usual form I do not remember to have ever met with.

On the lofty and almost perpendicular cliffs of Scratchell's bay this, with samphire, thrift and other maritime plants, forms large patches of vegetation on the narrow ledges of the chalk-rock called by the cliffsmen "greens," similar verdant spots composed of grass being designated "meads," and both are resorted to in the season, for birds and their eggs, by that adventurous race, though only accessible from above by a rope at much personal risk, and attempted in a manner which makes the inexperienced shudder to witness.

The Great Shrubby Orache (*Atriplex Halimus*, L.), known by its much larger size, upright stem, angular and very silvery leaves, is common in gardens along the coast, where, together with the tamarisk, it makes excellent sea-fences.

Order LXIV. POLYGONACEÆ, *Juss.*

"Sometimes monœcious or dicecious. *Perianth* free, divided, the segments often in a double row. *Stamens* definite, but varying in number, from the base of the perianth. *Ovary* superior, with 2 or more *styles* or sessile *stigmas*. *Achene* frequently triangular or lenticular, with 1 erect seed. *Embryo* in a farinaceous *albumen*, often lateral.—Herbaceous, rarely shrubby plants, with *sheathing stipules*!"—*Br. Fl.*

I. RUMEX, *Linn.* Dock.

"*Perianth* 6-partite: the 3 inner *segments* (of the fruit) large, connivent. *Stamens* 6. *Styles* 3: *stigmas* multifid. *Achene* triquetrous, covered by the enlarged inner sepals, which often bear tubercles."—*Br. Fl.*

[* *Plants not acid; flowers perfect.* Lapathum, Dock.

1. *R. Hydrolapathum*, Huds. *Great Water Dock*. "Enlarged sepals ovato-deltoid reticulated entire each with a tubercle, leaves lanceolate, the lower ones cordate at the base, petiole flat not margined above, whorls crowded mostly leafless."—*Br. Fl.* p. 357. *R. aquaticus*, *Sm.*: *E. B.* t. 2104.

By rivers, ditches, and in wet meadows; occasionally. *Fl.* July, August. 24. *E. Med.*—In meadows towards the upper end of Sandown level, in plenty. At Yarbridge, by the stream on the Brading side of the road going to Yaverland, and close by the hamlet.

W. Med.—Marsh near Easton, in plenty, *Mr. Snooke* ("R. aquaticus").

The largest and stoutest of our docks.

In my specimens the enlarged petals are only obscurely reticulated, nor is the tubercle very constantly present. Called *R. aquaticus* in B. T. W., but that plant is very rare in Britain, and is known by the absence of tubercles; are the two really distinct? Many species of this genus are very obscure and ill understood. *Wahlenberg*, in *Fl. Suec.*, refers our *R. Hydrolapathum* to the Linnæan *R. acutus*, not making it even a variety.

2. *R. conglomeratus*, Murr. *Sharp Dock*. "Enlarged sepals linear-oblong obtuse entire or obscurely toothed all bearing a tubercle, leaves oblong pointed, lower ones cordate or rounded at the base, whorls distant leafy."—*Br. Fl.* p. 359. *R. acutus*, Sm.: *E. B.* t. 724.

In moist meadows and pastures; frequent. *Fl.* June—August. 24.

3. *R. sanguineus*, L. *Bloody-veined Dock*. "Enlarged sepals narrow oblong obtuse entire one at least bearing a tubercle, leaves ovato-lanceolate, lower ones somewhat cordate, whorls distant on long generally leafless branches."—*Br. Fl.* p. 358. *E. B.* t. 1533.

β. Nemolapathum, Ehrh. *R. Nemolap.*, *Wahl. Fl. Suec.* i. p. 222.

In moist shady places, woods, hedges and pastures; abundant. *Fl.* July. 24.

The leaves of the present species are equal or subcordate at the base, broader and less waved than those of *R. crispus*, whose very narrow leaves are oblique on one side of the footstalk, and much more waved or crisped along the margin.

β. This, which, if only a variety of *R. sanguineus*, seems the only Swedish form of it, has the uppermost enlarged petal bearing a grain nearly of its own diameter, and of a bright crimson-colour; the two other petals usually carry each a smaller and paler grain; at other times all or only two of the petals bear fully formed tubercles. Readily distinguished from *R. crispus* by its more slender habit, and more distant whorls of smaller flowers.

4. *R. pulcher*, L. *Fiddle Dock*. "Enlarged sepals triangular ovate reticulated with prominent veins deeply toothed one of them principally bearing a tubercle, lower leaves panduriform or cordate oblong obtuse, upper ones lanceolate acute, stem spreading."—*Br. Fl.* p. 359. *E. B.* t. 1576.

In pastures, waste places, churchyards, and by waysides; not unfrequent. *Fl.* June—September. *Fr.* July. 24.

E. Med.—By Quarr abbey, 1849. Border of a cornfield above Sandown bay, but sparingly, 1848. On the virgin turf of Brading down, near its summit; and on the southern slope of the down, near its base, a little beyond the second chalk-pit from Morton, in considerable plenty, 1849. Abundant in Newchurch churchyard, 1841. Bonchurch, just at the entrance on the new building-ground below the cliff, in plenty. On the shore at Bembridge. In Binstead churchyard, *W. Wilson Saunders, Esq.* (where it grows plentifully)!!!

W. Med.—Abundant between Yarmouth mill and the town, 1846. Remarkably luxuriant and with very large radical leaves in Brixton churchyard. In Calbourne churchyard and at Freshwater Gate. In Thorley and Freshwater churchyards. About Freshwater, Yarmouth and Aston, *B. T. W.*

Root long, cylindrical, not much branched, covered with a smooth brown bark, bright yellow or orange-coloured within, fleshy and somewhat brittle. *Stem* 1 or several, from a foot or less to 18 inches high, pale green, erect or partly procumbent, wavy, deeply angulato-sulcate, roughish with minute cartilaginous asperities or glabrous, much and irregularly branched, often from the base; the branches variously spreading and divaricate, simple or compound, slender, flexuose and angular. *Leaves* dull green, flaccid and glabrous, much waved, crisped and sinuately crenulate along the margins, the lower and radical ones on long footstalks, oblong, elongato-oblong or oblongo-lanceolate, obtuse, pointed or even acute, retuse or sometimes abruptly acuminate, cordate at base, with overlapping crisped lobes, commonly with a deep and obtuse sinus a little below the middle, like the contracted sides of a violin,—hence the name,—and which is found in those higher on the stem, though occasionally either wholly or partially wanting to all the leaves or very indistinct; upper stem-leaves gradually becoming narrower and more acute, very shortly stalked, reduced below the whorls to linear bracts, which

are very acute, undulate, with deflexed margins, and curved upwards or spreading, and, like the leaves, beset along the midrib and lateral veins underneath with cartilaginous wart-like granulations. *Whorls* numerous, rather few-flowered, distant or interrupted, leafy. *Flowers* green, on thickish nodding or decurved pedicels, which are shorter than the perianth, and have a swollen articulation in the middle of their length. Three *outer perianth-segments* (calyx) narrow-oblong, concave, obtuse, clasping the inner segments with their incurved tips, their margins whitish and membranaceous; three *inner segments* at first not greatly exceeding the outer, at length enlarged to several times their length, triangular, oblong or tongue-shaped, more or less obtuse or somewhat acute, strongly reticulated with prominent veins, pectinato-dentate, the upper one especially, with several long, acute, spreading teeth on each side, that are mostly directed upwards, the point of the valves entire, sometimes all three, but the uppermost valve principally, bearing a large, reddish, cartilaginous tubercle, of a triangular-oblong form, attenuated in front into the prominent midrib; often wholly or partially absent from the two inferior valves, that are often less toothed than the remaining one. *Stamens* as long as the petals; *anthers* pale yellow, linear-elliptical. *Germen* green. *Nuts* firmly enclosed by the very hard, rigid and persistent, rust-coloured perianth; about a line in length, broadly ovate, trigonous, with strongly keeled angles and flat or somewhat concave faces, chestnut-brown, smooth, shining, greatly resembling in shape and colour miniature chestnuts.

It is puzzling to account for the epithet *pulcher*, bestowed upon this species, than which a more homely and unattractive weed could hardly have been pointed out as less deserving of the attribute of beautiful.

I observed the Fiddle Dock growing abundantly at Charleston, South Carolina, chiefly in the areas of the churches in the city, where, Elliott says, it is exotic. I have also remarked it at New Orleans, and other parts of the southern and western United States.

5. *R. obtusifolius*, L. *Broad-leaved Dock*. "Enlarged sepals ovate or oblong-triangular obtuse toothed at the base one principally bearing a tubercle, root-leaves ovato-cordate obtuse, upper ones oblong or lanceolate, stem roughish." — *Br. Fl.* p. 359. *E. B. t.* 1999.

Very common by roadsides and in waste ground. *Fl.* July September. 24.

6. *R. pratensis*, M. & K. *Meadow Dock*. "Enlarged sepals unequal cordate dilated toothed at the base with a small entire triangular point one principally tuberculated, leaves oblong-lanceolate waved, clusters nearly leafless, whorls distinct." — *Br. Fl.* p. 358. *Borr. in E. B. S. t.* 2757.

In moist pastures. *Fl.* June, July. 24.

E. Med.—On the Dover, Ryde, *Wm. Borrer, Esq.*, 1843!!

W. Med.—Near Newtown, 1842 (in company with Mr. Borrer). In the Cypess meadow at Apes down, *Wm. Borrer, Esq.*, 1844.

7. *R. crispus*, L. *Curled Dock*. "Enlarged sepals broadly cordate entire or crenulate reticulated one only with a perfect large coloured tubercle, leaves lanceolate waved acute, upper whorls leafless." — *Br. Fl.* p. 358. *E. B. t.* 1998.

In pastures, waste places and by waysides; very frequent. *Fl.* June—August 24.

R. maritimus vel *R. palustris*.—"One or both of these species grow very finely by the roadside in or by Shorwell village, *Rev. G. E. Smith.*" I cannot find either of these species at Shorwell, though a place abounding in localities well suited to produce two plants equally likely to occur; nor is Mr. Smith now by any means

certain of the correctness of his own statement respecting them. I notice it however to direct the attention of botanists to their discovery.

** *Plants acid ; flowers diœcious.* Acetosella, Sorrel.

8. *R. Acetosa*, L. *Common Sorrel*. "Outer sepals reflexed, enlarged ones orbicular-cordate entire membranous reticulated with a minute spherical tubercle at the base, leaves oblong-sagittate."—*Br. Fl.* p. 360. *E. B.* t. 127 ?

In moist meadows and pastures, especially in poor sour land. *Fl.* May—July. 24.

9. *R. Acetosella*, L. *Sheep's Sorrel*. "Sepals ascending, inner ones scarcely enlarged ovate not tuberculated, lower leaves lanceolate-hastate, lobes entire."—*Br. Fl.* p. 360. *E. B.* t. 1674.

In fields, meadows and pastures, waste places and on hedgebanks, in poor dry soils ; abundant. *Fl.* May—July. 24.

II. POLYGONUM, Linn. Persicaria.

"*Perianth* single, in 5 deep, coloured, persistent segments. *Stamens* 5—8. *Styles* 2—3. *Achene* compressed or trigonous."—*Br. Fl.*

* *Styles mostly 2. Stamens 5 or 6. Fruit compressed or 2-edged.* Persicaria.*

1. *P. amphibium*, L. *Amphibious Persicaria*. Flowers pentandrous, styles forked united half-way up, spikes ovato-cylindrical, leaves petiolate cordato-lanceolate rough at the margins. *E. B.* t. 436. *Br. Fl.* p. 355.

α. natans. Floating ; leaves broadly oblongo-lanceolate, smooth and shining.

β. terrestre. Erect ; leaves lanceolate, and as well as the stipules hairy on both sides.

α. In ponds and clear shallow ditches ; rare. *β.* In low wet places which are occasionally overflowed ; not uncommon, but seldom flowering. *Fl.* July, August. 24.

α. In a small pond near the roadside just out of Kingston on the way to Shorwell, in plenty.

β. Abundant in a hollow by the roadside on the left-hand a few hundred yards beyond the turnpike going from Yarmouth to Shalfleet. Sandown marshes, and at Freshwater Gate. Area of Quarr abbey, 1842.

In variety *α.* (the typical form) the creeping perennial *root* emits a *stem* of several feet in length, branched, floating, fistular, rooting at the joints, often reddish. *Leaves* floating, on long petioles, rather leathery, broadly lanceolate and more or less cordate at the base, many-ribbed, bright shining green above, paler beneath quite glabrous excepting along their edges, which are rough with minute, interrupted, spinous points, often scarcely visible under a lens, or wholly wanting except towards the two ends of the leaf. *Ochreæ* close, with pale ribs, often torn but not fringed. *Spikes* solitary or geminate, the secondary on a lateral much shorter peduncle than the primary one, erect, oblong, of many crowded bright rose-red flowers, rising several inches above the water on long, triangular, coloured stalks. *Perianth* seated amidst sheathing membranous *bracts*, its segments con-

* Except in that of the primordial or uppermost flowers of the spike, which open first, and bear usually 3-cornered fruit, as do *all* the blossoms in the next tribe.

nivent, with 5 reddish compressed glands at the base surrounding the germen. *Stamens* 5, longer than the perianth; *anthers* rose-coloured, their lobes linear, united only by the insertion of the filament at a single point; *pollen* whitish, globular. *Styles* about as long as the perianth, united about half-way up; *stigmas* capitate, rose-coloured. *Germen* ovate, compressed.

2. *P. lapathifolium*, Ait. ? (vix L.) *Pale-flowered Persicaria*. "Stamens 6, styles 2 distinct, spikes oblong-cylindrical dense erect, peduncles and perianth glandular and scabrous, achenes compressed smooth and shining concave on both sides, leaves ovato-lanceolate shortly petiolate, lower stipules not fringed, upper ones shortly fringed."—*Br. Fl.* p. 356. *E. B. t.* 1382. *P. Persicaria*, *Wahl. Fl. Suec.* i. *P. pensylvanicum*, *Curt. Fl. Lond.* (excellent).

On rich cultivated or waste ground, dung-hills, &c.; frequent. *Fl.* July—September. ☉.

Probably only a permanent variety of the following species, though with characters sufficiently definite and constant to support an opposite opinion. It may be distinguished by its generally larger size and broader leaves, which are more evidently stalked, the peduncles being very rough, whilst in *P. Persicaria* they are smooth or nearly so; but this character is subject to considerable variation. More certain marks are to be found in the total want of the long hairs that fringe the ochreae in *P. Persicaria*; in the stalks of the paler more robust spikes, which are beset with pedicellate glands, making them appear rough all over, and from which the same part in *P. Persicaria* is perfectly free. In this latter the styles are united for about half their length; here they are separate to within a short distance of their point of insertion. The nut in the present species differs from that of *P. Persicaria* in its much larger size, less pointed form, and in having on the two equally flattened faces a broad central depression, occupying a great part of their areas, which in *P. Persicaria* are quite plane or rather a little convex. Both species agree in the smoothness of their fruit, but that of *P. lapathifolium* appears to be, when ripe, of a paler colour, with considerably less polish; nor have I ever observed it to take the occasional triquetrous form, as those of *P. Persicaria* do.* The leaves are somewhat downy beneath; the lower ones indeed, as Curtis remarks, are usually clothed with a thin cottony pubescence, and the upper sprinkled with glandular dots.

3. *P. Persicaria*, L. (in parte). *Spotted Persicaria*. "Stamens 6, styles 2—3 connected to the middle, spikes compact ovato-oblong cylindrical erect, peduncles nearly smooth, perianth glandular, achene compressed and gibbous on one side or triquetrous, leaves lanceolate (often spotted), stipules lax strongly fringed."—*Br. Fl.* p. 356. *E. B. t.* 756. *P. biforme*, *Wahlenb. Fl. Suec.* i. p. 242.

In low, rich, moist ground, on ditchbanks and dung-hills; common. *Fl.* July—September. ☉.

Polygonum Bistorta, L. (Bistort or Snake-weed) has been quite established for many years in the kitchen-garden at Westridge, and, though doubtless introduced there, cannot now be eradicated. Albert Hambrough, Esq., sends me specimens from a wet meadow near the pond at Old Park, where he found it abundantly in 1838.

* This however they do occasionally in the primordial blossoms.

Root very fibrous. *Stem* erect or procumbent below, and rooting at the joints, simple or branched, 2—3 feet high, roundish, green or reddish, tapering between the joints, above each of which it is swollen or enlarged in a bulbous form. *Leaves* lanceolate, bright green, almost sessile, waved, acute, quite entire, ciliated along the edges with short bristly hairs, and having commonly a dark spot, more or less distinct and sometimes wholly wanting, on their upper side about the centre. *Ochreae* much shorter than the internodes, abrupt, with many pale ribs, ending in long fringing hairs. *Spikes* on lateral and terminal smooth peduncles, in colour from bright rose-red to nearly white, hardly above an inch long, ovate and obtuse. *Segments* of the perianth connivent, blunt. *Stamens* 6; *anthers* round, their lobes not disunited. *Styles* mostly 2, sometimes 3, forked, united upwards for about half their length. *Fruit* ovato-acuminate, quite smooth, black and shining, mostly compressed and 2-edged, but often towards the summit of the spike are found a few seeds acutely triquetrous, and which, according to Wahlenberg, are the produce of the earlier expanded flowers, which have probably always 3 styles and as many angles to the germen.

4. *P. Hydropiper*, L. *Biting Persicaria*. "Stamens 6, styles 2 nearly distinct, spikes lax filiform at first drooping, peduncles smooth, perianth glandular, achene lenticular compressed dotted opaque, leaves lanceolate waved, stipules mostly with scattered glands mostly fringed."—*Br. Fl.* p. 357. *E. B. t.* 989.

In moist places by roadsides, on ditchbanks and in wet meadows; abundantly. *Fl.* August, September. *Fr.* September, October. ☉.

5. *P. minus*, Hud. *Small Sweet Persicaria*. "Stamens 6, styles 2 combined to above the middle, spikes slender lax erect, peduncles smooth, perianth without glands, achene lenticular-compressed smooth and shining, leaves linear-lanceolate plane very shortly petiolate, stipules ciliated without glands."—*Br. Fl.* p. 357. *E. B. t.* 1043. *Fl. Dan.* xiii. t. 2230. *Curt. Fl. Lond.* (admirable).

Fl. August, September. *Fr.* September, October. ☉.

E. Med.—Marshes at Sandown, *Miss Lovell*, in whose herbarium is an indubitable specimen marked *P. Hydropiper*. In very great profusion in the little drains intersecting the meadows on Sandown level, betwixt the high road from Ryde and Brading to Ventnor, and Lake and Blackpan commons, extending up the valley in front of the latter, and growing intermixed with *P. Hydropiper*. I was conducted to the spot by *Miss Lovell*, Sept. 1847.

Root annual, of many long, whitish, simple, slender fibres. *Stem* one or more from the same root, often numerous, from a foot or less to 18 or 20 inches in length, sometimes ascending or nearly erect, more commonly procumbent and rooting below at the joints, sometimes quite prostrate, simple or variously and often very copiously branched, round, slender, very smooth and glabrous, usually tinged with red, sometimes with the leaves, when growing in comparatively dry open places, all over of a deep purple colour, enlarged above each joint. *Leaves* alternate, very shortly stalked, almost sessile, narrowly elongato-lanceolate or sub-linear, acute, scarcely attenuated at base, but rather rounded at the top of the very short and broad petiole, widely spreading, horizontal or partly deflexed, the larger ones about 2—3 inches in length and about half an inch in breadth, bright

Polygonum mite.—A solitary specimen of this very apocryphal species was picked by the *Rev. G. E. Smith*, Sept. 1838, in a lane between Apley and St. John's, near Ryde!! I have not succeeded in finding it there since, but have reason to believe that it grows intermixed with *P. Persicaria* and *P. minus* in the marshes of Sandown level.

light green above, paler beneath, marked on both sides with depressed dots or glands, flat or slightly wavy only, their margins minutely spinuloso-ciliate, the lateral veins of the leaf very indistinct above, more conspicuous underneath. *Ochreae* close, destitute of transparent glands or dots, membranaceous, truncate, with many pellucid ribs, terminating in long fringe-like hairs or cilia, much more conspicuous than in *P. Hydropiper* from their greater length. *Spikes* axillary and terminal, on long compressed peduncles, straight and very slender, almost filiform, erect, not drooping or at most slightly nodding, often interrupted, a small knot of one or more flowers being commonly found separated from the superior and continuous portion of the spike by an interval more or less remote. *Flowers* smaller than in *P. Hydropiper*, somewhat loosely imbricated, deep rose-red. *Bracts* coloured. *Nuts* broadly ovate or ovato-elliptical, pointed, partly and rather obtusely trigonate, the rest more or less compressed and lenticular, deep purplish or brownish black, very smooth and shining.

This species stands in nearly the same relation to *P. Hydropiper* that *P. dumentorum* and *P. Convolvulus* do to one another.

** *Styles* 3. *Stamens* mostly 8. *Fruit* triquetrous. "*Flowers* axillary."—Br. Fl.

6. *P. aviculare*, L. *Knot-grass*. Vect. *Wire-weed*. "Leaves elliptic-lanceolate, stipules much shorter than the internodes with few distant simple nerves, stem herbaceous, achene about as long as and covered by the perianth striated with raised points."—Br. Fl. p. 354. *E. B.* t. 1252.

a. Stems erect, very slender and wiry.

β. Stems prostrate, spreading mostly in a circular form; leaves small, crowded. In cornfields, waste places, and by roadsides; everywhere. Fl. May—September. ☉.

a. Abundant in corn-stubble, as at Cowes, &c., &c.

β. In sandy ground by the sea. Plentiful along the shore between Ryde and Sea View, 1845.

7. *P. Raii*, Bab. *Ray's Knot-grass*. *Great Sea Knot-grass*. Stem procumbent herbaceous, ochreae 2-lobed ovate acute at length torn with few unbranched distant nerves, flowers axillary, fruit very smooth and shining much longer than the perianth. *Babing.* in *E. B. Suppl.* ii. t. 2085. *Linn. Trans.* xvii. t. 458. *P. aviculare* *ε.*, *Sm. E. Fl.* ii. p. 238. *P. Roberti*, *Lois.*: *Br. Fl.* p. 354. *P. maritimum*, *Ray, Syn.* p. 147.

In loose sand or dry waste ground by the sea; occasionally. Fl. July—September. ☉.

E. Med.—On the shore between Sea View and the Priory, very sparingly.

W. Med.—On waste ground opposite Plumley's hotel, Freshwater Gate, and at Brook I find what I believe to be this species.

A var. of what is probably this species, having remarkably large and broad obovate leaves, grows by the pathside above the cliff of Sandown bay, 1845.

Leaves pale green or somewhat glaucous, mostly longer than the joints of the much-branched stem except in the lower part. *Ochreae* whitish, torn, the laciniae equal in length to the flowers. *Flowers* mostly 3 (seldom 5) together in the axils of the leaves, nearly sessile. *Perianth* with a very broad white border. *Fruit* large, smooth, destitute of striæ, terminating in a rather acute point, much longer than the perianth.

Our *P. Raii* and *P. maritimum* bear the same relation to each other as *Salicornia herbacea* to *S. radicans*, and it is probable that the latter species of both genera are but perennial varieties of the two former, the stems surviving a mild winter, and acquiring firmness sufficient to resist two or more returns of frost, and finally becoming ligneous through age. Of *P. Raii* I shall only remark that in

the specimens gathered at Freshwater Gate the fruit partakes in character both of *P. aviculare* and that species, being considerably exserted, as in *P. Raii*, but finely punctate or striate, under a lens of moderate power, as in *P. aviculare*, yet with considerable glossy lustre. Whoever will read attentively Mr. Babington's account in the Suppl. to E. B. will perceive how much ambiguity attaches to the discrimination of these two species of a genus so notoriously variable as the present.

*** "Styles 3. Achene triquetrous. Stem erect, twining, with cymose branches."
—Br. Fl.

8. *P. Convolvulus*, L. *Climbing Buckwheat. Black Bindweed.* Vect. Lily.* "Leaves cordato-sagittate, stem twining angular, segments of the perianth bluntly keeled (rarely winged), fruit opaque striated with minute points." — Br. Fl. p. 355. E. B. t. 941.

β. Segments of the perianth distinctly winged.

In corn and other cultivated fields, gardens and waste ground; a troublesome weed; also in moist hedges and thickets, not uncommonly. Fl. July—September. ☉.

β. Running up pea-sticks in the garden of Williams's at Shanklin. On the Dover, Ryde, Wm. Wilson Saunders, Esq. !!!

Root slender, branched. Stem slender, much branched, climbing to the length of several feet upon hedges and bushes, or trailing on the ground in open situations, twisted, roughish and sharply angular or furrowed. Leaves alternate on the lower portion of the stem, 2, 3, or 4 together under the flowering branches, cordato-sagittate, their lobes acute, dark green, taper-pointed, thin, sometimes near the sea a little fleshy. Flowers greenish or reddish, in remote subverticillate clusters of 4—6 or more, on the short lateral branches, which thus become leafy racemes, finally much interrupted by the elongation of the common axis; lowermost clusters with a single leaf under them, upper ones leafless or nearly so, all enclosed in a short sheathing bract. Pedicels smooth, jointed near the flower, elongated and deflexed in fruit. Segments of the perianth very obtuse, greenish at the back, broadly edged with white, three alternate ones larger, enveloping and in fruit almost concealing the three inner and smaller segments, and having a white keel down the centre of each, very inconspicuous in α., much broader and more distinct in β. Stamens 8 (or sometimes 6, Sm.), a little connivent; anthers bright purple, with a rounded granulated protuberance at the back between their very flat lobes; pollen white. Styles extremely short, closely united (sometimes only 2, Sm.); stigmas roundish. Seeds brownish black, opaque and without polish, more or less acutely triquetrous, rough with short striæ or ridges disposed lengthwise.

The var. β. is remarkable as uniting to the habit and general aspect of *P. Convolvulus* much of the character of *P. dumetorum*, and thus strengthening the suspicion of Wahlenberg (Fl. Suec.), that this latter is but a woodland form of the more common species. The perianth is almost as broadly winged as in my specimens of the true *P. dumetorum* from Wimbledon in Surrey, but the wings do not taper down so decidedly into the pedicel, and though it agrees with *P. dumetorum* in the elongation of the racemes, the somewhat greater length of the flower-stalks than is usual in *P. Convolvulus*, and the very distinct whorls of from 5 to 10 or more flowers, it has not the slender and graceful appearance of that species. The fruit in our present variety is precisely the same as in the common form, except that the faces of the seed are deeply concave, with 3 sharp ridges between them, an appearance dependant on the imperfect development of albumen in the seed, and which cannot therefore be assumed as an absolute character. The stem is angular, and the leaves are of a thicker texture than in *P. dumetorum*, in which

* And over the whole county.

the former is smooth and the latter remarkably thin and delicate. With many points in common between *P. Convolvulus* and its varieties and *P. dumetorum*, it is certain that the latter preserves a peculiarity of aspect and an identity of character highly favourable to the opinion that they are distinct as species, nor would anything short of actual proof to the contrary, except a knowledge of the protean tendencies of the whole genus to variation, justify their being united.

Order LXV. THYMELACEÆ, Juss.

"*Perianth* free, tubular, often coloured, 4—5 cleft. *Stamens* inserted upon the tube, definite, when equalling in number the segments of the perianth opposite to them. *Anthers* 2-celled, opening longitudinally. *Ovary* 1, free, 1-celled, with 1 pendulous ovule. *Style* 1 and *stigma* 1, undivided. *Fruit* an achene, berry or drupe. *Seed* 1, pendulous. *Albumen* none, or thin and fleshy. *Radicle* superior. Shrubby, without stipules."—*Br. Fl.*

I. DAPHNE, Linn. Laurel.

Perianth single, often coloured, 4-fid. *Stamens* 8. *Fruit* a berry.

Elegant evergreen or deciduous shrubs, of rather humble growth, with tough pliant branches, purple, white or greenish flowers, which often appear in early spring, and are highly fragrant. Berries red or black, and with the bark possessing intense acrimony.

1. *D. Laureola*, L. *Spurge Laurel*. Vect. *Copse* or *Wood Laurel*. Racemes axillary drooping about 6—10 flowered, leaves obovato-lanceolate attenuated below glabrous evergreen. *Sm. E. Fl.* ii. 229. *Br. Fl.* p. 361. *Bab. Man.* 261. *E. B.* ii. t. 119. *Loud. Arb. Brit.* iii. 1309, fig. 1183. *Jacq. Fl. Aust. Icon.* ii. 49, t. 183. *Lind. Syn.* 209.

In woods, thickets, groves and shady hedgerows, on a damp clay (more rarely chalky) soil, principally in East Medina and the neighbourhood of Ryde; frequent. *Fl.* January—April. *Fr.* June, July. ♀.

E. Med. — In Quarr copse, Shore copse, and by the roadside (right-hand one) from Quarr abbey to the Fish-houses, frequent. In the lane between Binstead church and the Newport road, sparingly. About Ninham farm and many other places about Ryde, but nowhere abundantly. Frequent in thickets and hedgebanks by the roadside between Ryde and Ashe, just before coming to Aldermoor heath. Amongst the trees between the pond and the lodge of Ryde house, also in the hollow or dell by the brickfield at Brooklands, Binstead, but very sparingly in both places. Wooded bank between Brading and Nunwell. Below Apley house. On the bank at the top of a sloping field immediately above Span farm,

Fagopyrum esculentum (Buckwheat or Brank), occurs in fields and waste places, the remains of or a stray from cultivation, being largely grown as food for pheasants, but is scarcely naturalized here.

The English name Buckwheat is an exact translation of the Latin *Fagopyrum*, itself a Greek derivation from *φῶνός* and *πυρός*, i. e., Beech-wheat, *Buch weizen* in German, having nothing to do with deer, and as little apparent connexion with the tree whose name it bears, except it be from the resemblance of its seed to those of the beech-tree.

and in an adjoining part of Appuldurcombe park, in a wooded hollow just within the wall on the S. side of the park, in both places rather plentifully, 1844. A plant or two near Godshill, on the E. side, 1843. In the patches of copse S.E. and E. of Aldermoor moor, frequent, 1845. In the large copse on the E. bank of Wootton river, by Ash-Lodge farm. Common in the first large coppice on the W. side of Wootton river at its mouth, stretching along the shore towards King's quay, 1846. On the hedgebank by the roadside between Aldermoor heath and Smallbrook farm, 1845. Very frequent, and in some parts even abundant, in the large irregular copse between Ninham farm and the Newport road (called Puckett's?), as well as in the adjoining coppices and hedgebanks. On the high bank by the roadside between Merston and Arreton, near the former (on green? sand), in some plenty, 1845. On Watch-house point, and on slipped clay-banks and in woods by the sea at the Priory, 1846. By the Pulpit Rock, and wood between Steephill and St. Lawrence, *Albert Hambrough, Esq.!!!* In St. Boniface copse (opposite St. Boniface cottage), in considerable plenty, *Miss Hadfield!*

W. Med.—On Carisbrooke-castle hill, amongst the trees on the East and North sides, sparingly, and amongst bushes at the upper end of the plantation of beeches in Stopler's copse, between Yarmouth and Thorley, 1846.

An elegant evergreen shrub, from about 2 to 4 feet high, quite glabrous. *Root* of several long stout fibres, covered with a thick, fleshy and succulent bark. *Stems* one or more, erect, or when numerous often spreading and ascending at the base, seldom above the thickness of the finger, nearly simple or with a few long, slender, erect, rounded and very tough branches, that are leafless and scarred below, and covered like the stem with a thick extremely acrid bark, and a smooth ash-gray cuticle. *Leaves* persistent, leathery, scattered towards the extremities of the branches, crowded at their summits into spreading circular tufts, remarked as giving a palm-like aspect to this shrub, partly a little drooping and recurved at their tips, obovato-lanceolate, or attenuated into their petioles so gradually as to be broadest considerably above the middle, 4 or 5 inches long, dark shining green above, paler beneath, obscurely veined, with a strong midrib, their margins quite entire and slightly inflexed. *Flowers* half-hidden amongst the leaves, in short, lax or drooping, axillary clusters of from 6 to 10 or more, very shortly pedicellate, pale yellowish green, with a sweet saffron or cowslip scent, very perceptible in moist mild weather. *Perianth* half an inch in length, slender, cylindrical, the limb cleft into 4 short, ovate, rather acute, spreading segments, each flower subtended by a greenish, ovato-oblong and concave bract, shorter than the flower and deciduous. *Stamens* included, in two distant rows on the tube of the perianth; *anthers* orange-coloured, as is the coarse globular *pollen*; 4 of them just visible at the mouth of the tube, 2-celled, introrse. *Style* extremely short; *stigma* peltato-capitate, bristly. *Ovary* smooth. *Fruit* (drupe) bluish or purplish black, ovoid, about $4\frac{1}{2}$ lines in length, very juicy. *Seed* (nut) dark green, obovoid, pointed at one end, the albumen very acrid.

The Spurge Laurel is universally cultivated in gardens and shrubberies for its rich dark-green foliage, where it forms a low but spreading tufted bush, superior perhaps in beauty to the equally common but foreign *D. pontica*, distinguished by its brown bark, ovato-elliptical leaves, erect terminal racemes and very long acuminate perianth-segments. *Daphne Laureola* thrives well on cold clay soils and under the drip of trees; is a great lover of shade, the leaves assuming a sickly yellow and curled appearance on exposure to sun in the open border. It is much sought for by nurserymen as a stock on which to graft the less hardy species, whereby its existence in our hedges and thickets is often endangered. The Rev. G. E. Smith tells me that the Spurge Laurel is collected in large quantity from the woods in Sussex, by persons who go at stated periods round the country for that purpose, and supply the markets at Portsmouth and Chichester, where it is sold as a horse medicine, but he was unable to ascertain in what manner or for what diseases it was employed, probably, like *Helleborus fatidus*, as a counter-irritant, for which the bark, from its excessive acrimony, is well adapted. It is however worthy of remark that the pulp of the fruit, which is not very plentifully produced on this side of the water, is perfectly bland and innocuous, whilst the

nut or kernel is as acrimonious as any part of the plant, a fact which applies equally to the berries of our other British *Daphne*, the well-known and fragrant *Mezereon* of the gardens, which are swallowed with impunity by birds, since the kernel is passed by them unbroken.

I once found a flower of the Spurge Laurel with 6 divisions, including within a single perianth a double set of stamens and two ovaries, perfectly distinct, yet without any appearance as if two of the blossoms had cohered and grown together.

Order LXVI. SANTALACEÆ, *R. Br.*

"*Perianth* adnate with the ovary; its *limb* 3—5 cleft, with valvate aestivation. *Stamens* 3—5, opposite to the segments of the perianth, epigynous. *Ovary* 1-celled, with 1—4 ovules, pendulous from near the summit of a free central *placenta*. *Style* 1. *Stigma* often lobed. Fruit hard, dry, and somewhat drupaceous, 1-seeded. Albumen fleshy, with the *embryo* in its axis. — Trees, shrubs, or herbaceous plants. Leaves *alternate* or *nearly so*, without *stipules*. Flowers *small*."—*Br. Fl.*

I. THESIMUM, *Linn.* Toadflax.

"*Perianth* 4—5 cleft, persistent. *Stamens* with a small fascicle of hairs at their base. *Stigma* simple. *Drupe* crowned with the persistent perianth."—*Br. Fl.*

1. *T. linophyllum*, L. *Lint-leaved Bastard Toadflax*. "Stems procumbent or ascending, leaves linear-lanceolate 1-nerved, racemes simple or paniced leafy, peduncles and pedicels with three bracteas, pedicels usually as long as the flower in fruit spreading their angles and the edges of the bracteas and upper leaves denticulato-scabrous, fruit oval-oblong."—*Br. Fl.* p. 362. *Sm. E. Fl.* i. p. 338. *Lind. Syn.* p. 208. *E. B.* iv. t. 247. *T. humifusum*, *D.C.*

On dry, open, mostly hilly and chalky pastures and banks; frequent. *Fl.* June—August. 24.

E. Med.—On Ashes down. On chalky banks facing the sea at Ventnor, *Miss*

Daphne Mezereum.—In the manner described above solitary specimens of the *Mezereon* are occasionally found disseminated in woods and thickets of this island. A single small plant was found in a moist brambly thicket about a quarter of a mile W. of Wacklands, by Mr. Thatcher, 1845 !!! A specimen had been found some years previously at Apse castle by Mrs. Cheverton, of Apse farm, and by her transplanted into the garden there, where I saw it growing. Such an occurrence however is so rare as to preclude all idea of its being a native, here, although apparently truly indigenous to the woods of the interior of Hants, Dorset and Sussex, where however it is seldom allowed to remain undisturbed, from being dug up by the cottagers for sale or to plant in their gardens. Though quite a northern species, ranging even to Lapland, the *Mezereon* is a shrub rather of eastern and continental than of western Europe, avoiding a maritime coast climate; hence it is absent from Scotland and the western half of England, nor does Ireland produce either of our British *Daphnes*.

G. Kilderbee !!! Common on the downs about Ventnor, *Dr. Martin* !!! Banks near Brading, *Mr. W. D. Snooke*. [Bembridge down, *A. G. More, Esq.*, Edrs.]

E. Med.—In the Lenten-field pit, by Carisbrooke. In the sand on the spit at Norton. On grassy slopes between the woods in the valley near Rowledge, pretty plentifully, 1843. Freshwater down, *Rev. G. E. Smith* !!! Banks near Colwell, Afton and Freshwater downs, in great abundance, *Mr. W. D. Snooke*. Chalk-cliffs on the S. side of the Isle of Wight, *Dr. Stokes*, Bot. Guide.

The prostrate form, growing on banks facing the sea at Ventnor, is probably the var. *β. humifusum* of Duby's Synopsis, the *T. humifusum* of D.C., 'Flore Française.'

Root parasitic on various plants, according to Mr. Mitten,* thick and woody, yellowish and branched. *Stems* very numerous, much branched from the base, slender, solid, furrowed and angular, from 6 to 18 inches long or even more, forming dense procumbent tufts, spreading chiefly on one side or in a fan-shaped manner, when growing amongst taller plants erect or ascending at their extremities. *Leaves* alternate or scattered, distant, nearly erect, grayish green or turning to yellowish green when old, an inch in length, linear, very narrow, plane above, fleshy, submucronate, quite entire, with rough cartilaginous edges, a little incurved, with a single stout midrib imbedded in the substance of the leaf and projecting into a blunt keel on its rather convex under side. *Flowers* small, white, rather distant, on diverging roughish pedicels several times their own length, forming a rather long terminal raceme, each flower with 3 unequal bracts beneath it, like the leaves but smaller, the outer one the largest. *Perianth* cleft about half-way down into 5 acute, white, fleshy, triangular segments with green backs, each with a single tooth-like process on either side at its base. *Stamens* 5, inserted at the base of the segments and opposite to them on the top of the green glandular portion or lower half of the perianth, their filaments very short and a little connivent, each having near it and just above its insertion a small bundle of glandular hairs reaching upwards to the anthers, but, though in contact, not appearing united with the latter. *Style* short, thick, angular, crowning the germen, which is half-buried in the short fleshy tube of the calyx; stigma roundish, granulated, 2-, 3-, or 4-lobed, often entire, scarcely cloven as described by Smith and in the bad figure of this part in E. B., but simply furrowed or chinked transversely.

* The Rev. G. E. Smith remarks that this plant occurs very frequently with proliferous extremities at Ventnor.

Order LXVII. EUPHORBIACEÆ, Juss.

"Anthers and pistils in distinct flowers. *Perianth* free, 3—4 (or more) cleft, or wanting.—*Barren flowers*:—*Stamens* 1 or many. *Anthers* 2-celled.—*Fertile flowers*:—*Ovary* 1, 2—3 celled. *Ovules* solitary or in pairs, pendulous. *Styles* 2—3. *Stigmas* 2—3, 2-lobed or compound. *Capsule* of 2—3, 1- or 2-seeded united carpels, usually bursting and separating with elasticity from the common axis, sometimes indehiscent or nearly so. *Seeds* suspended. *Embryo* in the axis of a fleshy albumen; cotyledons large, flat; radicle superior. *Stems herbaceous or woody. Leaves alternate, opposite or whorled, sometimes none.*"—*Br. Fl.*

* See 'London Journal of Botany' for 1847.

I. EUPHORIA, Linn. Spurge.

Dioecious or monoecious.—*Barren flowers*:—*Perianth* single, tripartite. *Stamens* 9—12, without any rudiment of an ovary; *anthers* of 2 globose lobes.—*Fertile flowers*:—*Perianth* single, tripartite. *Filaments* 2—3, without *anthers*. *Styles* 3, simple. *Capsule* 3-celled; *cells* 1-seeded, bursting at the back.

The capsules of this genus, when ripe and kept in a warm dry atmosphere, continue for many days to discharge the seed elastically to a considerable distance, bursting to pieces irregularly, with a sharp crackling noise, like so many little shells. The same may also be observed in *Mercurialis*, a genus closely allied to the present, and in others of the same natural family.

A. *Leaves furnished with stipules. Stems prostrate. Involucres solitary, axillary or in the forks of the branches.*

1. *E. Peplis*, L. *Purple Spurge*. *Br. Fl.* p. 366. *E. B. t.* 2002.

On sandy sea-shores; very rare. *Fl.* July—September. ☉.

In Sandown bay, *J. S. Mill, Esq.*!

The only specimen gathered by Mr. Mill in the above locality, the most easterly station yet recorded for this rare species in Britain, has been kindly presented to me by that gentleman (together with examples of *Cladium Mariscus*, also discovered by him in this island some years ago). The Rev. G. E. Smith also believes he formerly gathered this species in the above locality.

"Remarkable for its procumbent stems of a glaucous hue much tinged with purple and stipuled leaves."—*Br. Fl.*

B. *Leaves without stipules. Stems erect or ascending, the flowering ones umbellate above.*

a. *Leaves scattered or alternate.*

* *Glands of the involucre rounded.*

2. *E. helioscopia*, L. *Sun Spurge*. *Wartwort*. "Umbel of 5 principal 3-fid and bifid branches, bracteas and leaves membranaceous obovato-cuneate serrated upwards, capsule glabrous, seeds reticulated and pitted."—*Br. Fl.* p. 366. *E. B. t.* 883.

In waste and cultivated ground, cornfields, neglected gardens, &c.; a common weed. *Fl.* July—October (occasionally in spring). ☉.

The present as well as the following species are frequent in cultivated places in Canada and the northern parts of the United States. I have noticed them about Quebec and Montreal.

3. *E. platyphylla*, L. *Broad-leaved Warty Spurge*. "Umbel of about 5 principal 3-fid and bifid branches, bracteas cordate, leaves membranaceous broadly obovato-lanceolate acute finely serrulate, glands of the involucre (yellow) oval, capsule warted, seeds smooth (brownish)."—*Br. Fl.* p. 367. *E. stricta*, L.: *E. B. t.* 333 (starved specimens). *Jacquin, Ic. Plant. Rar. Fl. Aust.* iv. t. 376 (deser. præstantissima).

In cornfields, waste and cultivated ground, and by roadsides; not uncommonly. *Fl.* June—October. ☉.

E. Med.—Rather frequent about Ryde, as near Fishbourne, and by the footpath in the field betwixt Quarr copse and the farm. Amongst the wheat in a field

Westbrooke farm, between Ryde and Nettlestone, and remarkably fine and abundant in a corn-field by Beaper's farm, between Ryde and Brading. Fields above the new church at E. Cowes. In a large field a little S. of Beanaere farm, between Long Phillis and Inwards coppice, plentiful but of diminutive size, 1844. Copse on the W. side of the Wootton river at its mouth, 1845. Wheat-field between Prestwood and Smallbrook farm, 1849. About Brading, *B. T. W.*

W. Med.—Corn-fields at Thorley and by Shalcombe. Near Ganson's, by Gatcombe. Cornfields near W. Cowes, not unfrequent. Between Yarmouth and Ningwood, in a field of oats, most abundantly, 1840. About Colwell, *B. T. W.*

Plant copiously secreting an acrid, glutinous, milky latex, and excepting the leaves and bracts perfectly smooth and glabrous. *Root* annual, whitish, long, slender, tapering and flexuose, with horizontal simple or branching fibres. *Stem* solitary, erect or slightly ascending at the very base, from a foot or less to 18 or 20 inches high, later in the year often attaining to 3 feet, round, hollow, quite smooth and glabrous, simple below or very commonly with a pair of opposite ascending branches from the very bottom, which towards the end of the summer attain very nearly the height of the main stem, become, like that, much expanded at top, firm and harder in texture, and frequently assuming a bright coral-red colour. *Leaves* alternate or scattered and somewhat remote, pale grayish, bluish or whitish green, faintly nerved, thin and flexile, spreading or partly deflexed and decurved, on extremely short almost obsolete petioles, from which the leaf is extended nearly at a right angle, as remarked by Jacquin, l. s. c.; *central* stem-leaves the largest, from about $1\frac{1}{2}$ to 2 or $2\frac{1}{2}$ inches in length and from 5 to 8 or 9 lines in width, elongato-oblong or elongato-obovate, the *superior* leaves elongato-lanceolate, the *lowermost* much smaller, more or less truly obovate, attenuated into the *petiole*, entire and often glabrous, rounded or retuse; all the *rest* pointed, minutely and acutely serrulate, particularly on their upper half, glabrous or very nearly so above, clothed beneath with extremely fine, soft, erect hairs, rounded and subcordate or auricled at base, those above the middle of the stem bearing flowering peduncles, those below its centre short leafy shoots or branches in their axils, which are partly embraced by the petioles and the cordate bases of the leaves. *Umbels of the main stem* and lateral basal branches large, spreading, about 5 times forked or compounded, the flowers of the two ultimate divisions very shortly stalked, or in the fifth and highest quite sessile and reclining in the cup-like folded bracts; *primary rays* mostly 5, sometimes 3, with an abortive flower in their centre; of the secondary umbels 3, 4, or 5, the central flower mostly perfect, tertiary and subsequent divisions bifid or 2-rayed, also bearing perfect flowers between them; umbels of the lateral peduncles mostly 3-rayed, twice or thrice compounded. *Bracts* of the main divisions of the terminal umbel like the upper leaves in shape and colour, those of the secondary and subsequent divisions of that and of the lateral umbels yellowish green, varying as they ascend from ovato-elliptical to broadly ovate and in the highest cordate, mucronato-apiculate, serrulate, sparingly pilose or even glabrous underneath. *Glands of the involucre* first green, then dull orange, truly oval or suborbicular, depresso-punctate, nectariferous. *Anthers* green, of 2 obovoid, flat-tish, diverging lobes; *pollen* amber-yellow. *Styles* 3, erect, greenish, bifid, subglobose, yellowish and viscid at apex. *Capsules* small, globose, with 6 furrows, the intermediate lobes or faces closely beset with wart-like granulations.

E. platyphylla, when allowed to reach its full dimensions in autumn, in which state it is often 3 feet high, with the main umbel more than a foot wide, and those of the twin branches nearly as broad, is one of the most elegant of British plants, from its regularity of growth, the bright red of its shining stem and branches, the delicate green of its leaves, and graceful slenderness of its habit.

I have gathered this species by roadsides near Montreal in plenty.

** Glands of the involucre pointed or angular.

† Bracts united at the base.

4. *E. amygdaloides*, L. *Wood Spurge*. "Umbel of about 5 or 6 principal branches and several scattered peduncles below, leaves nearly membranaceous obovato-lanceolate hairy beneath attenuated at the base entire, glands of the involucre (yellow) lunate with 2 horns, capsules minutely tuberculate glabrous, seeds smooth."—*Br. Fl.* p. 369. *E. B.* t. 256. *E. sylvatica*, L.: *Bertol. Fl. Ital.* v. p. 97.

A beautiful and abundant species in woods, thickets, and along moist hedges throughout the island. *Fl.* April—June. *Fr.* June, July. 24.

Root perennial, thick, woody, blackish brown externally, emitting several creeping often much-branched fibres, and, like the rest of the plant, milky. *Stems* several, in the larger plants very numerous, about 2 feet high, branched chiefly at the base, simple above, round and slender, erect or a little ascending at their origin, sometimes tortuous, tough, woody, scarred, leafless and of a fine coral-red or purple below, and glabrous or nearly so, hollow, leafy, succulent and finely downy towards the summit with almost woolly hairs, perishing after having once flowered or biennial. *Leaves* numerous, alternate or scattered, quite entire, persistent through the winter, those of the barren or first year's shoots obovato-oblong or obovato-lanceolate, from about 2 to 4 inches in length, pale grayish green, soft and flexible, rosulate, downy on both sides; those of the flowering stems similar in form, but usually smaller and shorter, firmer or subcoriaceous, dark green, shining and nearly or quite glabrous above, crowded towards the summit of the stem, the uppermost smaller and partly erect, those lower down becoming larger and in turn patent, spreading or deflexed, with recurved tips; all the leaves obtuse or very slightly pointed, very gradually tapered into the petiole, often tinged of a fine purple beneath, and with their margins somewhat deflexed or involute, obscurely veined, with a strong pale green midrib; the uppermost on the flowering stems bractescent or subtending the scattered peduncles, elliptical, oblongo-elliptical or even obovate, apiculate or slightly retuse, sessile or nearly so.

Umbel terminal from the leafy apex of the previous year's shoots, drooping before expansion, afterwards erect, forming with the numerous scattered peduncles beneath it an oblong, round-topped, subcorymbose panicle of from 8 or 9 to 12 inches in length; *principal rays* from 5 to 8 or 10, subglabrous, once or twice dichotomously forked at the summit, and bearing at each bifurcation a large, pale yellowish green, glabrous, circular, perfoliate *bract*, partially cleft or divided laterally into 2 semiorbicular segments, at first capped or concave, afterwards flat (the margins of the sinus forming small, rounded, overlapping lobes), retuse or slightly apiculate at the point of its greatest diameter, and mostly carrying a solitary flower in its centre or in the angle of the fork it subtends: similar bracts accompany the divisions of the scattered accessory or inferior peduncles. *General involucre* usually of as many obovate, elliptical or oblong sessile leaflets as there are rays to the umbel, a little hairy, rather unequal, green like the leaves. *Glands* lunate, glabrous, greenish yellow, sometimes of a beautiful purple or orange, somewhat bluntly toothed or crenate here and there, surrounding 3 or 4 staminate florets and 1 pistillate one, besides a number of imperfect staminate ones concealed in the woolly interior of the urceolate involucre. *Style* nearly erect, bifid at the summit, the lobes divaricate, thickened or glandular, slightly reflexed. *Germen* glabrous. *Capsules* small, green, very deeply and bluntly 3-lobed, glabrous, finely granulate, scabrous. *Seeds* oblongo-rotundate, pale ashy gray, smooth and glabrous, under a high magnifier minutely punctate, tipped with the small, roundish, lobed and depressed caruncle, of a waxy white colour.

The earliest of all our Spurges, in very mild seasons beginning to flower as early as January or February. It has not yet been found wild in Scotland, and appears to be very rare in Ireland.

‡ Bracts distinct at the base.

5. *E. portlandica*, L. *Portland Spurge*. "Umbel with about 5 principal dichotomous branches and several inferior scattered ones, bracteas triangular-cordate, leaves membranaceous obovato-lanceolate generally obtuse and submucronate, glands of the involucre (4) lunate with 2 long points, capsule rough at the angles, seeds dotted (almost white)." — *Br. Fl.* p. 368. *E. B. t.* 441.

On rocks and cliffs by the sea, also on the beach itself, as well as occasionally in woods and thickets along the shore; very rare with us. *Fl.* June—August.

4. *E. Med.* — Plentiful on steep banks and cliffs at the N. E. extremity of Sandown bay, as noticed in *B. T. W.*, the only station I am yet acquainted with. The plant, which is there of humble growth, occurs most frequently on the chalk just at its junction with the green sandstone. ["It attains a large size on the crumbled chalk at the foot of the Culvers," *A. G. More, Esq., Edrs.*]

Herb very milky and acrid. *Root* long, tough, woody and flexuose, scarcely branched, whitish. *Stems* very numerous, forming a dense, roundish, spreading tuft, often of considerable diameter, round, slender, ascending and somewhat woody, about a foot high, purplish at the base or often entirely coral-red. *Leaves* numerous, small, scattered, sessile, erect or spreading, entire, pale glaucous-green, oblong or obovate, with a single prominent rib beneath, ending in a small deflexed point, soon falling from and leaving the lower portion of the stems bare and scarred. *Umbels* terminal, of 5 principal compressed rays, with mostly a few scattered peduncles beneath it, which, as well as those of the principal umbel, are dichotomously branched at the summit. *General involucre* roundish ovate, *partial* ones rotundato-cordate or subrhomboidal, mucronate, in all my specimens very obtuse, though said in *E. B.* to be pointed. *Glands* 4, lunate, dull orange, with incurved points, one of which is often either smaller or quite wanting; sometimes both are deficient, as I find not unfrequently the case in the specimens before me. *Stamens* very deciduous. *Styles* 3, nearly erect, deeply cleft; *stigmas* simple, glandular, yellowish. *Capsules* small, very obtusely 3-lobed, granulato-scabrous, especially about the angles. *Seeds* roundish, varying from reddish brown to grayish white, with a linear chink or furrow on one side when ripe, finely punctate, dimpled and carunculate.

This species, though widely diffused in Britain, is nowhere seen on our eastern coasts beyond Dover. It is generally rare in other parts of Europe, though common in Brittany, and according to Portenschlag found also in Dalmatia.

6. *E. Peplus*, L. *Petty Spurge*. *Wartweed*. "Umbel of about 3 principal branches, bracteas ovate, leaves membranaceous broadly obovate on short stalks entire glabrous, glands of the involucre lunate the horns very long, germen somewhat winged and scabrous, seeds dotted." — *Br. Fl.* p. 369. *E. B. t.* 959.

In cultivated and waste ground, especially about towns at the close of summer; common. *Fl.* July—November. ☉.

Frequent about Ryde in neglected gardens.

A bushy, glabrous, milky and acrid herb. *Root* whitish, tapering, branched, with numerous slender fibres. *Stem* 6—12 inches high, erect or reclining, usually dividing into 3 principal branches, round, smooth, and mostly tinged with purplish red, copiously and dichotomously ramified above. *Leaves* bright pale green, slightly glaucous, sometimes tinged with purple, thin and membranous, a little concave, obovate, quite entire, obtuse or slightly pointed, sometimes a little emarginate at the apex or mucronulate, those of the main stem few, scattered, caducous, petiolate: at the forks of the branches opposite or 3 together, on shorter

stalks or quite sessile and oblique at the base. *Umbels* very small, terminal, repeatedly di-trichotomous. *Flowers* very minute, scarcely above a line in breadth, yellowish green. *Bracts* ovato-cordate, apiculate, concave. *Glands* of the involucre 4, lunate, greenish, deeply pitted, with 2 long, slender, incurved white hairs. *Lobes* of the involucre erect, ciliated. *Anther-cells* spherical, bursting by a transverse fissure. *Styles* short, erect, deeply cleft, very obtuse. *Capsules* extremely small, glabrous, with a double, narrow, undulated and rugose wing or border at each angle. *Seeds* prismatic, truncate, light gray or ash-colour.

I have remarked a monstrous form, in which some of the ovaria were converted into a long horn-shaped excrescence surmounted by the styles. The juice of this species, as of *E. helioscopia*, is employed to destroy warts.

7. *E. exigua*, L. *Dwarf Spurge*. "Umbel of generally 3 principal forked branches, leaves linear-lanceolate as well as the bractes rather rigid entire glabrous often truncate and mucronate, glands of the involucre roundish with two horns, capsules nearly smooth slightly tuberculate on the angles, seeds angular wrinkled or reticulated."—*Br. Fl.* p. 369. *E. B.* t. 1336.

In corn-fields, cultivated and waste ground, in every part of the island; abundantly. *Fl.* July—November. ☉.

The smallest and most branched of our Spurges, characterized by the linear and pointed involucre.

Capsules small, bluntly trigonate, smooth or a little roughish at the angles only. *Seeds* light ash-gray or partly clay-coloured, ovato-oblong or roundish, angular, with a dark line down the inner corner like a suture, their lower end tipped with a white heart-shaped carunculus, deeply muricato-rugose all over.

b. *Leaves opposite, decussate.*

*8. *E. Lathyris*, L. *Caper Spurge*. *Vect. Caper-bush*. "Umbel of 3—4 principal bifid branches, bractes cordato-acuminate, leaves submembranaceous entire 4-farious on the first year's stem oblong-lanceolate and cordate at the base on the second year's shoot, glands of the involucre bluntly lunate, germen glabrous, seeds rough."—*Br. Fl.* p. 369. *E. B.* t. 2255.

In waste and garden-ground amongst potatoes, and by roadsides near houses, occasionally; scarcely wild. "*Fl.* June, July. ♂."—*Br. Fl.*

Not very unfrequent about Ryde, as on the Dover and in the fruit-gardens at St. John's. At Binstead, Cowes, St. Lawrence, &c., coming up spontaneously from seed where it has not been previously cultivated, but unquestionably escaped from cottage-gardens, where it is very common, and when once introduced not easily eradicated. It is however certainly indigenous to many parts of Britain, appearing in newly thinned copses.

Root tapering. *Stem* upright, round, smooth, hollow, very milky, 2—3 feet high or more. *Leaves* opposite, placed so closely together as to appear in whorls of 4, each pair standing at right angles to the next pair above and below it, all sessile, smooth, with a white midrib, the upper ones oblong-lanceolate, gradually diminishing downwards, the lowermost linear, deflexed and crowded. *Umbel* solitary, terminal, forked, with 4 principal branches, its ultimate divisions in threes. *Bracts* cordate, acute, very large, quite concealing the uppermost flowers. *Glands* of the involucre 4, lunate, with 2 round distant lobes: between the glands of the involucre are as many membranous expansions of the latter (lobes of the involucre), which are ovato-acute, and have all the appearance of petals enclosing, like them, the parts of fructification, and to which the glands stand much in the relation of an outer perianth. *Styles* 3, grooved, spreading; *stigmas* cleft, obtuse. *Capsule* very large, globular, 6-furrowed, quite smooth, as are the 3 oblong seeds.

II. MERCURIALIS, Linn. Mercury.

"Diœcious or monœcious.—*Barren flowers*:—*Perianth* single, tripartite. *Stamens* 9—12, without any rudiment of an ovary; *anthers* of 2 globose lobes.—*Fertile flowers*:—*Perianth* single, tripartite. *Filaments* 2—3, without *anthers*. *Styles* 2, single. *Capsule* 2-celled; *cells* 1-seeded, bursting at the back."—*Br. Fl.*

1. *M. perennis*, L. *Perennial* or *Dog's Mercury*. "Diœcious, fertile flowers in stalked lax spikes, stem perfectly simple, leaves rough, root creeping perennial."—*Br. Fl.* p. 365. *E. B. t.* 1872.

In woods, groves, and on moist shady hedgebanks; abundantly. *Fl.* February—April. 24.

About Ryde, at St. John's, Apley, in Quarr copse, &c. Profusely in all the woods about Shanklin, Appuldurcombe, in the park at Swainston, &c., &c.

The tender green herbage of the Dog's Mercury is nearly the first to appear above ground in spring, and is almost persistent in mild winters. *Root* or rather rhizoma slender, terete, white or reddish, creeping horizontally, giving off at intervals bundles of branching and partly downy fibres, which again strike out at right angles to its course. *Stems* one or two, seldom more from the same root, from about 10 to 15 inches high, erect, solid, rounded, slightly and oppositely winged between the tumid joints and on the same side with the leaves, roughish, especially above, with short, stiff, spreading hairs, their lower joint or two leafless. *Leaves* 2, 3, or 4 inches long, opposite, distant, the lowermost pair much smaller than the rest and very remote, the middle pairs largest, the uppermost again diminished in size, ovate or ovato-lanceolate, acute or even acuminate, closely and evenly crenato-serrate, the serratures thickened, incurved, and obliquely tipped with a minute pellucid gland, deep green and often somewhat shining, flexile, strongly veined, roughish on both sides with short, simple, erect pubescence. *Petioles* scarcely an inch long at most, semiterete, hairy and grooved. *Stipules* small, triangular-lanceolate, quite entire, deflexed, a pair at the base of each petiole on its upper side, and between which in the axils of the lowermost pair of leaves is a rudimentary flower-stalk like a greenish gland. *Flower-spikes* axillary, solitary, simple, wanting in the lowermost pair of leaves, and occasionally there is one deficient in some of the upper pairs, erect, slender, furrowed, angular, naked for a great part of their length, those of the staminate plant mostly as long as or longer than the leaves, many-flowered; of the pistillate plant much shorter, almost concealed by the leaves and few-flowered.—*Staminate flowers* in small, sessile, alternate, somewhat remote clusters, each blossom very shortly pedicellate, subtended by ovate bracts, of which there is one much larger immediately under each cluster. *Perianth* deeply cleft into 3 roundish, ovate, concave, green

Euphorbia Cyparissias is plentifully naturalized in the shrubbery at Northwood park, W. Cowes, the residence of the late George Henry Ward, Esq.: *Miss G. E. Kilderbee* !!!

E. pilosa P.—The Rev. G. E. Smith recollects gathering a species of *Euphorbia* with hairy fruit some years ago in a wood along the shore W. of Ryde, which, as far as his memory serves, agreed with specimens of *E. pilosa* since seen by him at Oxford. Nothing of the kind has fallen in my way there yet.

[*E. Paralias*.—This species, formerly a stranger to the Isle of Wight, was sown by our lamented author in 1848, on the sandy spits of St. Helens in the East Medina, and of Norton, near Freshwater, in the West Medina. In the former place it has now been observed by Dr. Bell-Salter for several years, occurring with increasing frequency all along the shore at the foot of the sandbanks on the side towards the open sea above the shingle. *Vide* Phytol. vol. iii. p. 820.—*Edrs.*]

segments, glabrous. *Stamens* about 9—12, clustered in the centre of the flower and about as long as the segments, unaccompanied by any rudimentary germen; *anthers* greenish yellow, of 2 globular lobes united at the back by a thick connectivum and bursting along the centre of their superior half; *pollen* yellow. — *Pistillate flowers* few, subsolitary, on bracteate pedicels like the staminate but rather longer. *Perianth* as in those. *Germen* compresso-globose, 2-lobed, setoso-hispid, having on either side between the lobes at their base, and inserted on the perianth, an erect, deciduous, awl-shaped process, dilating at the bottom and somewhat bristly, that has been termed a nectary for want of a better name, though conjectured to be abortive stamens; I have however once or twice observed them to secrete a drop of fluid. *Style* deeply cleft, the segments thick, recurved, rough with notched, pellucid, glandular crests or ridges, beneath green. *Capsules* dark brown, hispid and tubercular, of 2 globose often unequal lobes the size of peppercorns, with a longitudinal suture, but bursting in pieces elastically. *Seeds* large, globular, with a small pointed protuberance, at first dark brown, dotted with small shallow depressions, and covered with a thin membrane or tunic, which adheres firmly to the quite ripe seed, which then becomes light gray and wrinkled.

The Miss Sibleys, of Hall Place, near West Meon, inform me that cows greedily devour the herbage of *M. perennis*, when it is within their reach, without injury to themselves, though reputed poisonous to cattle and the human species. See Gardiner, 'Flora of Forfarshire,' p. 160.

The plant turns partially blue in drying, and perhaps contains indigo or some analogous principle, which after vitality is extinguished absorbs oxygen, and becomes apparent by precipitation in the vegetable tissue. Yet the attempts of Mr. ———, of Glasgow, to obtain a permanent colouring matter or dye-stuff from it have failed of success. This, like the next species, the Rev. Hugh Davies has seen quite monœcious.

2. *M. annua*, L. *Annual* or *French Mercury*. "Fertile flowers whorled nearly sessile, stem with opposite branches, leaves glabrous, root fibrous annual.

"*α*. Dioecious, leaves ovate or ovato-oblong, fertile flowers in lateral spikes." — *Br. Fl.* p. 366. *E. B.* t. 559. *Fl. Dan.* t. 1890 (mas).

"*β*. Monœcious. Barren and fertile flowers mostly in sessile axillary clusters. *Br. Fl.* p. 366. *M. ambigua*, L. *fil.*: *Pl. Rar. Hort. Upsal.* t. 8. *E. B. Suppl.* t. 2816.

In garden-ground and waste places about towns, but not very common. *Fl.* July—November. ☉.

E. Med.—On the Dover and elsewhere at Ryde, occasionally. In a garden in George street, Ryde, with *Micandra physaloides*, but sparingly, 1844. Between Godshill and Sandford, *Albert Hambrough, Esq.*, 1848. At Steephill, *id.*!!! At Ventnor, *Dr. Martin*!!! "On the sea-beach near Ryde, plentifully," *Ray* (now extinct). [On the shore at Bembridge, near the Coast-guard station, *A. G. More, Esq.*, Edrs.]

W. Med.—Field at Gurnet bay, near Gurnet farm, 1839. Abundant in Northwood park, amongst potatoes, *Miss G. Kilderbee*!!!

"*β*. With the common form, but rarely. A troublesome weed in the fruit-gardens at St. John's, introduced perhaps with foreign seed, and where it may be seen passing more and more into the usual dioecious and spicate form of inflorescence every successive year.

Herb quite glabrous in every part. *Root* whitish, tapering, branched, with several stout, rigid, flexuose fibres. *Stem* erect, from about 12 to 18 or 20 inches high, pale green, sharply angular and furrowed, with a thick rectangular wing or ridge alternating between each joint, solid, copiously and oppositely branched from the very base, in the larger specimens forming a very bushy herb, the branches decussate, more or less spreading or erect, the lowermost usually ascending, and as well as the stem itself bulbously tumid at their junction with the latter. *Leaves* opposite, subtending the branches and flower-stalks, bright (some-

times dark) green, paler and a little shining beneath, the nerves whitish above, prominent beneath, quite smooth on both surfaces from about $1\frac{1}{2}$ to 3 inches long, ovato-lanceolate, acute or rounded at the point, fringed with remote spinulose setæ, strongly, evenly and rather distantly serrate, the serratures very obtuse; entire and either slightly rounded or attenuated at base, where are a pair or sometimes two pairs of minute, fleshy, gland-like bodies, formed by the abrupt expansion and thickened termination of the prominent margins of the short channelled petiole. *Stipules* small, ovate or triangular, acuminate, erect and incurved, appearing at the enlarged bases of the lower branches considerably remote from the leaf they belong to. *Flowers* in size, structure and appearance like those of *M. perennis*, the *staminiferous*, as in that, in small, sessile, roundish clusters, on long, filiform, erect, axillary and solitary common peduncles, of which the clusters occupy the superior half only; *pistilliferous* flowers on much shorter stalk than those of the same kind in *M. perennis*, appearing at first sight almost sessile, though the pedicels elongate a little in fruit, and are either solitary or clustered 2 or 3 together, with very minute bracts at their base, one of them often more lengthened out than the others, and bearing a solitary perfect or imperfect staminate flower at its apex. *Style* much smaller than in *M. perennis*.

The var. β . is a common form in the S. of Europe, and has been noticed as growing plentifully in the Channel Islands by Messrs. Babington and Christy. The younger Linnæus considered it a distinct species, and after him many botanists have held the same opinion, but, though very different in appearance in some respects, it is certainly, as DeCandolle remarks, but a variety, and not a very permanent one either, of *M. annua*. The Ryde specimens differ from the more usual state of the species in the more ovate leaves, which are of a much paler green, with less distinct nerves, and more remotely serrated. The flowers are in small, roundish, axillary clusters of 8 or 10 together, sometimes consisting entirely of either male or female blossoms, more usually mixed, the latter elevated above the former on rather long peduncles. This arrangement of the sexes is analogous to what we find in *Buxus*, *Euphorbia*, and other genera naturally monœcious. I found at Winchester, in 1849, *M. annua* exhibiting its usual diœcious character, but with the flowers of both sexes in axillary nearly or quite sessile clusters, as in the present variety.

This species is a very troublesome weed in many parts of England, as in market-gardens at Battersea fields near London, and about Bristol. Like the preceding, it turns partially blue in drying.*

Order LXVIII. URTICACEÆ, Juss.

"*Flowers* generally monœcious or diœcious (very rarely some of them perfect), scattered or amentaceous, or aggregated on a fleshy persistent receptacle. *Perianth* divided, persistent or wanting. *Stamens* definite, distinct, opposite the lobes of the perianth and inserted at its base when there is one. *Ovary* free, 1-celled. *Ovule* solitary. *Fruit* usually an *achenium*, often several combined and immersed in the persistent fleshy perianths or upon or within large fleshy receptacles. *Embryo* with the *radicle* superior. — Trees, shrubs, or herbs, with stipules, often stinging and sometimes milky."—*Br. Fl.*

* This property is not common to all the species of the genus, as for instance *M. tomentosa* of the S. of Europe, which retains its colour unaltered by desiccation.

Tribe I. *URTICÆ*.

"Flowers usually separate from each other. Filaments curved inwards during æstivation, then bending outwards. Anthers inverted in æstivation. Style and stigma 1. Ovule erect. Embryo straight, in the axis of fleshy (but often thin) albumen. Stipules small."—Br. Fl.

I. *URTICA*, Linn. Nettle.

"Monœcious or diœcious. — Barren flowers: — Perianth of 4 leaves, containing the rudiment of a pistil. Stamens 4.—Fertile flowers: — Perianth of 2 leaves, with sometimes 2 external smaller ones or bracteas. Stigma 1, sessile, penicillate. Fruit an achene. — Leaves opposite."—Br. Fl.

1. *U. dioica*, L. Great Nettle. "Leaves ovato-acuminate or ovato-lanceolate serrate cordate or rounded at the base, spikes in pairs mostly diœcious much branched longer than the petiole, root perennial."—Br. Fl. p. 373. E. B. t. 1750.

In waste ground, along hedges, in woods and by roadsides; abundantly. Fl. July, August. ☿.

2. *U. urens*, L. Small Nettle. "Leaves elliptical serrate with about 5 nearly parallel ribs, spikes in pairs oblong nearly simple shorter than the petiole, achenes obscurely granulate opaque, root annual."—Br. Fl. p. 373. E. B. t. 1236.

In waste ground, on rubbish, and by roadsides; common. Fl. June—September. ☉.

II. *PARIETARIA*, Linn. Pellitory.

"Where the mouldering walls are seen
Hung with pellitory green."

Clare.

"Polygamous. Perianth 4-fid. Stamens 4, wanting in some flowers; filaments transversely wrinkled, at first incurved, then bending back with elastic force. Style filiform. Stigma penicillate. Achene shining, enclosed by the perianth. — Leaves alternate."—Br. Fl.

Urtica pilulifera, L. (Roman or Pill-bearing Nettle), grows at Gosport, somewhere, I understand, on the way to Gomer pond. The seed is sold in considerable quantity, under the name of Roman Nettle, by the London seedsmen, I am told for some medical purpose, though what that is I am unable to learn, as this plant does not form an official article in any of our London pharmacopœias; nor is it worth cultivating for ornament. The knowledge of this fact favours a suspicion I have always entertained, that *U. pilulifera* has in all its British stations originated from the garden of the grower of simples.

1. *P. officinalis*, L. *Common Pellitory of the Wall*. "Leaves oblong-oval or ovato-lanceolate attenuated at both ends 3-nerved above the base, involucre of two 3—7 lobed segments with an alternating bractea 3—7 flowered, flowers sessile, that between the segments with a pistil only, one only on each segment perfect at length enlarged tubular coloured and longer than the stamens, the others when present barren always short and campanulate."—*Br. Fl.* p. 374. *E. B. t.* 879.

On old walls and rocks, also on shady hedgebanks and chalk-cliffs by the sea; very frequent. *Fl.* June—October. 24.

E. Med.—Amongst the ruins of Quarr abbey. Churchyards at Newchurch and Brading, abundant.

W. Med.—Churchyards of Brixton, Northwood and Freshwater. Abundant on the wall by the roadside beneath Carisbrooke church, also on the walls of the castle.

Root of several stout, tapering, woody fibres, of a bright flesh-red colour internally. *Stems* numerous, 1—3 feet high, erect, ascending or diffuse, round, solid, succulent, branched, of a purplish colour with green streaks, downy, brittle and somewhat pellucid. *Leaves* numerous, alternate, stalked, elliptical-lanceolate varying to ovate or lanceolate, attenuated at the base, shining green, a little scabrous, downy on both sides, quite entire, with 3 or 5 depressed nerves above, and as many prominent ones on their pale under surface. *Petioles* rounded, reddish, very hairy, without stipules, each of those on the main stems with a short leafy shoot or branch, and 2 or 3 small roundish clusters of flowers in its axil. *Involucre* nearly sessile, diphyllous, the leaflets combined below, each cut into from 3 to 6 ovate irregular segments, shorter than the flowers, strongly fringed, single-ribbed, each leaflet of the involucre (or bract?) 1—3 flowered, when single-flowered usually 3-cleft, otherwise multifid. Between the two leaflets on their point of union is a solitary central flower, bearing a pistil only and ripening seed.

For a curious and interesting account of the mode of fructification in *Parietaria* see Baxter's Gen. of Br. Flow. Plants, vol. iii. No. 224.

Tribe II. CANNABINEÆ.

"*Diœcious*. *Barren flowers racemose or paniced*. *Filaments of stamens straight and anthers erect during æstivation*. *Stigmas 2, sessile, filiform*. *Ovule pendulous*. *Embryo hooked or spiral, without albumen*. *Stipules small*."—*Br. Fl.*

III. HUMULUS, Linn. Hop.

"*Barren flowers*: —*Perianth 5-partite*. *Stamens 5*. *Anthers with 2 pores at the extremity*. — *Fertile flowers in a catkin, the scales (perianth?) concave, entire, single-flowered, at first enveloping the ovary, at length persistent and enlarged*. *Perianth 0, except the scale*. *Embryo spiral*."—*Br. Fl.*

1. *H. Lupulus*, L. *Common Hop*. *Br. Fl.* p. 375. *E. B. t.* 427.

In rather moist woods and hedges, in swampy or boggy thickets, osier-beds, &c.; abundant in most parts of the island. *Fl.* July, August. *Fr.* September, October. 24.

E. Med.—Frequent in moist thickets about Ryde, in St. John's wood, on the Dover, in Quarr copse, and along the Newport road, &c., but not very commonly in flower; in this state the male plant, which is more frequent than the female, may be gathered by St. John's tollgate, in Kingston copse near Niton, at Arretton and other places. In the boggy woods between Yarbridge and Yaverland, copiously. Abundant all along the Undercliff, where I have gathered the female plant with ripe strobiles. Very common about Godshill, 1844. Abundant in a hedge between Kerne farm and Alverston mill, where it is overrun with *Cuscuta europæa*. The female is abundant about Steephill, and near Niton on the way from the Sandrock hotel to St. Catherine's point, *Dr. Bell-Salter*.

W. Med.—Most abundantly in thickets, &c., about Brook house, 1844, where, and at Wolverton by Shorwell, it may be seen twining around every tree, and presenting the appearance of a natural hop-garden. Plentiful about Freshwater, at Norton, Yarmouth, &c. Common about Newport, Chale, and indeed in most other parts of the island.

Stems herbaceous, long, twisted, hexangular, reddish, rough along the angles with hard scabrous points and minute deflexed bristles or aculei, and twining over trees and bushes to a great length in a direction from East to West. *Leaves** opposite, on long, scabrous, angular, mostly contorted petioles, which are channelled above, rotundato-cordate, various in shape, for the most part 3-lobed, the lowermost very large and 5-lobed, the highest often ovate and undivided; dull deep green, beneath paler and sprinkled with small, yellow, resinous globules, plicato-rugose, harsh and rough to the touch, coarsely and sharply mucronato-serate, their lobes cuspidato-acuminate. *Stipules* opposite, in pairs between each two leafstalks, which they in some degree connect together, ovate or ovato-cordate, downy, many-ribbed, bifid and acuminate, often reflexed. *Staminate flowers* in lax, drooping, paniced, axillary and downy racemes, which are mostly shorter than the leaves; pale yellowish green. *Perianth* in 5 downy, unequal, concave, obtuse segments. *Stamens* 5, opposite the segments of the perianth, arranged round their point of union each on a glandular base; *anthers* on very short *filaments*, oblong, greenish, 2-lobed and 2-celled, somewhat awned, bursting on their inner face just beneath the apex, leaving the cells after the discharge of the *pollen* like two parallel inflated sacs or tubes. *Bracts* at the base of the pedicels and branches of the panicle, unequal in size and number, ovate or lanceolate. I can trace no rudiments of an ovary in the staminate flowers as we find in *Tamus*, &c. *Pistillate flowers* in small roundish or ovate catkins (*strobiles*), which are either on solitary, opposite, axillary, bracteated and downy peduncles, or in more or less compound, axillary and terminal, paniced racemes. *Floral bracts* (scales) closely imbricated, purplish brown or greenish, broadly ovate, acuminate, lax and spreading at the tips, many-ribbed, 2-flowered and downy, much enlarged after blossoming. *Perianth* none, except a persistent scale or bractlet, like the others but much smaller, enclosing the greenish, 2-lobed, compressed germen by a fold at its base. *Style* scarcely any, inserted on the summit of the germen between its lobes; *stigmas* 2, subulate, downy, spreading and recurved. *Nut* (achenium?) scarcely so large as hemp-seed, erect, subglobose, acutely margined all round, enveloped in a loose membranous tunic opened at the summit and sprinkled with resinous grains, itself embraced by a fold at the base of each now much enlarged bract, that bears but one and often no perfect seed, both flowers proving abortive.

When full grown the strobiles of the wild Hop seldom exceed an inch in length, but contain abundance of the peculiar principle (humuline) that makes the cultivated plant so valuable, and which is found chiefly on the inner surface of the floral bracts at their base, and on the loose covering of the seed, in the form of transparent, yellow, roundish and angular grains, of a fine aromatic odour. The

* The larva of the comma butterfly (*Vanessa C-album*) feeds on the leaves of the Hop, as also on those of the Currant and Nettle. Though a rare insect in the Isle of Wight, I have seen specimeus captured by my friend Miss Lucas at Sandown.

wild hops are collected, I am informed, by the country people here as a substitute for the more expensive growth of Kent and Surrey, and according to the author of the 'Flora Hibernica' they are perfectly efficient for the purposes of brewing beer. The cultivation of the Hop in this island is now quite abandoned, though it appears to have been attempted some years since on a limited scale near Kerne, which is the only place where I have heard of a hop-garden having been ever established.

Many persons, with Sir James Smith, have doubted the indigenous origin of the Hop in Britain, though on what grounds I confess myself unable to conjecture, as few plants have a more extensive range over the globe than this. Like the Elder, the claim of which to aboriginality has been questioned by some, it may safely be pronounced truly wild at least in the S. of England, and Mr. Mackay is of similar opinion respecting its title to rank as a genuine native of Ireland. It occurs with us, as does the Elder, in places the most remote from cultivation, in the innermost recesses of woods, and is widely distributed over Europe, Asia and America, ranging in the Old World as high as lat. 63° or 64°, and, though common throughout a great part of Siberia (Gmel. Fl. Sib.) scarcely reaches the 50th degree in the New Continent, according to Dr. Richardson (Fl. Bor. Am.)

Order LXIX. ULMACEÆ, Mirb.

"*Flowers* perfect or polygamous, not in catkins. *Perianth* membranous, inferior, campanulate and 3—8 cleft, or 5-partite; segments imbricated in æstivation. *Stamens* definite, inserted into the base of the perianth, as many as and opposite to its segments. *Anthers* 2-celled, erect in æstivation. *Ovary* free, 1—2 celled. *Ovules* solitary in each cell, pendulous or suspended. *Stigmas* 2, distinct, elongated. *Fruit* 1-celled, 1-seeded, indehiscent, dry or drupaceous. *Seed* pendulous, without or with little (fleshy) *albumen*. — Trees or shrubs, with scabrous, alternate, distichous, leaves."—*Br. Fl.*

I. ULMUS, Linn. Elm.

"*Flowers* perfect. *Perianth* persistent, with 3—8 divisions, campanulate or conical at the base. *Stamens* 5. *Filaments* straight in æstivation, not bending back elastically. *Ovary* 2-celled. *Capsule* compressed, winged all round."—*Br. Fl.*

The synonyms of this genus are so confused, and the limits of the European species at least so ill understood, that I shall confine myself to the view taken, of such as we possess, by Lindley, Smith, and other British botanists, however much at variance with the descriptions of continental authors, being persuaded, from the discrepancies that exist amongst these latter, that they are as little advanced towards the determination of the several species as we are.*

I am disposed to think that all our British elms might without risk be reduced to two, each bearing the impress of specific distinction in a degree and with a constancy that seems to admit of no doubt on that point.†

* The late Mr. Knight, of Downton castle, as I learn from Mr. Bentham, raised several of the supposed species of Elm from the seed of one kind alone.

† Of these two, *U. montana* is perhaps the only really indigenous or aboriginal species; the other, for which I would retain the not unexceptionable name of *U.*

†? 1. *U. suberosa*, Ehrh. *Cork-barked Elm*. "Leaves nearly orbicular acute obliquely cordate at the base sharply regularly and doubly serrated always scabrous above pubescent below chiefly hairy in the axil, branches spreading bright brown winged with corky excrescences when young very hairy, fruit nearly round deeply cloven naked."—*Lind. Syn.* p. 226. *Sm. E. Fl.* ii. p. 21. *Br. Fl.* p. 376. *E. B.* xxxi. t. 2161 (excellent). *Hunter's Evel. Syl.* i. p. 114 (*U. campestris*). *Loud. Arbr. Brit. Guimpel. und Hayne, Abbild. der Deutsch. Holtzart.* ii. 38, t. 28 (optima).

Abundant all over the island in hedgerows and along the borders of woods; by far the most plentiful Elm with us, yet not certainly indigenous. *Fl.* March, April. *Fr.* May. ♀.*

E. Med.—In the Elm-close copse, by St. John's. Woods near Park farm, by Nettlestone. Breaches copse, behind White-cliff bay.

W. Med.—Wood, called Bush Row, by Mottestone, between the church and the sea, mainly composed of this species.

The most common timber-tree in our hedgerows, more frequent even than the Oak, and thriving better on our wet clay about Ryde. About Nettlestone and at Quarr abbey are some of the largest elms in the island.

A timber-tree of the first magnitude, from 60 to 80 or 100 feet high, emitting copious suckers from the root, and even from the trunk at a considerable height, the branches spreading irregularly and much divided, hairy at their tips, covered, as well as the trunk, with a rough deeply cleft or chapped bark, which on very small and young trees often forms winged appendages of a corky texture. *Leaves* roundish ovate, acuminate or shortly cuspidate, very unequal at the base, coarsely, unequally and doubly serrate, 2—3 inches long, firm, dark green, a little shining and scabrous above, beneath pubescent, with downy tufts in the axils of the principal ribs. *Petioles* short, round, hairy. *Flowers* produced long before the leaves, shortly pedicellate, pale reddish or purplish, crowded into small, roundish, sessile or occasionally somewhat stalked clusters. *Bracts* thin, coloured, fringed, solitary at the base of each flower-stalk and soon falling away. *Perianth* downy, in 4 or 5 rounded segments, that are fringed in all my specimens, though described as smooth by Mr. Leighton, and so drawn in *E. Botany*. *Stamens* 4 or 5 (usually but 4), much exerted; *filaments* reddish; *anthers* large, dark purple, bursting outwardly, each cell with a deep furrow. *Styles* small, short, not coloured; *stigma* densely fringed, moderately curved and spreading.

2. *U. glabra*, Mill. *Smooth-leaved Wych Elm*. "Leaves ovato-lanceolate acuminate doubly and evenly crenato-serrate cuneate and oblique at the base becoming quite smooth above smooth or

suberosa, was perhaps derived to us by importation from a remote period. Our *U. campestris* is certainly not the *Linnaan* tree of that name, as I am convinced by inspection of the original specimen in the Linnæan herbarium, and which is rather our *U. montana* or some one of its varieties, the only kind indigenous to Sweden. The *U. campestris* of Smith, which I have not seen in this island, though found at Lymington, &c., is, I apprehend, a form of *U. suberosa* with very small leaves, and to these I suspect must be joined *U. major*, which indeed, except by its aspect, I know not how to distinguish from *U. suberosa*. Our *U. glabra* I regard as a mere form of *U. montana*, but in deference to higher authority I have refrained from uniting these last, as the propriety of doing so may still be questioned.

* In flower by the middle of February, 1842, and in full bloom before the end of the month about Ryde.

glandular beneath with a few hairs in the axils, branches bright brown smooth wiry weeping, fruit obovate naked deeply cloven." —*Lind. Syn.* p. 226. *E. B.* t. 2248. *U. suberosa*, *Ehrh.*, *γ. lævis*, *Br. Fl.* p. 376.

α. Leaves lanceolate, smooth and shining above, quite glabrous beneath.

β. Branches somewhat erect; leaves ovato-lanceolate, evenly downy beneath, pubescent but not rough above, and somewhat shining.

γ. Leaves large, remarkably smooth and shining; branches drooping. *γ. latifolia*, *Bab. Man.* p. 185?

In woods, but not common. *Fl.* March, April. *h.*

α. A large tree close to the entrance (from Brading) of Centurion's copse.

β. In Bloodstone copse, near Ashey farm, plentifully.

γ. In the yard of Apse farm, near Shanklin, a noble elm overhanging the pond.

A tree resembling *U. montana*, of which there seems every reason for supposing it to be a variety only, as the distinguishing characters are very evanescent. *Bark* of the smaller limbs and branches smooth and even, the latter always, I think, more minutely ramified. *Tufts* of flowers, as also the *flowers* themselves, smaller and redder than in *U. montana*, the twigs on which they grow bright reddish brown and quite smooth. *Bracts* broad, white and fringed. *Pedicels* assuredly shorter than either in *U. montana* or *U. suberosa* or almost sessile, but there is no absolute certainty in this respect. *Perianth* but slightly hairy (at least in my specimens of *α.*), tapering gradually into the pedicel, which is thus apparently abbreviated (the perianth in *U. suberosa* is shorter and more abrupt). *Stamens* mostly 6, occasionally with an hexandrous flower intermixed. *Styles* small, dark crimson, not much curved.

In *β.* the very smooth whitish brown branches have an upright mode of growth, and the leaves, though still lanceolate, are broader, and approach nearer in outline to those of *U. montana*. In the present variety the seed is oblong, considerably attenuated at the base, much smaller than in *U. montana*, cloven about half way down to the seed, and on longer peduncles.

γ. is less remarkable for height or thickness of trunk, though both are very considerable, than for its picturesque form, the great spread of its fine weeping boughs, and its handsome foliage. It appears to be intermediate between *U. montana* and *U. glabra*, and I have no doubt is the *U. glabra γ. latifolia* of *Lindl. Syn.* p. 227. The fruit is smaller than in *U. montana*, and cloven almost to the seed, the cuticle investing which is prettily tinged with red. Whether the tree is planted or wild at Apse, I know not.

3. *U. montana*, Sm. *Broad-leaved Elm. Wych Elm. Wych Hazel.* Leaves obovato-cuspidate doubly and coarsely serrated wedge-shaped and more or less unequal at the base scabrous above downy beneath, branches smooth, fruit obovate glabrous slightly cloven not ciliated. *Sm. E. Fl.* ii. p. 22. *Lind. Syn.* p. 227. *E. B.* xxvii. t. 1887. *Loud. Arb. Brit. Fl. Dan.* t. 632. *Guimp. und Hayne, Abbild. der Deutsch. Holtzarten.* i. 37, t. 27 (optima). *U. campestris*, L.: *Br. Fl.* p. 376.

In woods and hedgerows. *Fl.* March, April. *Fr.* May. *h.*

E. Med. — In several parts of Quarr copse, frequent, and where some of the trees are of considerable size. Rocky wood at East-end. Common in Cowpit cliff and Hatchet-close woods, near Shanklin.

W. Med. — In the little wood (Starknet copse) where *Tilia parvifolia* grows, near Yarmouth. In Westridge copse, near Shorwell, 1845.

A handsome tall tree, with wide spreading branches of a grayish or reddish ash-colour, the ultimate divisions downy, and much less twiggy than in *U. suberosa* or *U. campestris*; nor is this species, like them, so much disposed to send up suckers or stools from the root, or bundles of short slender shoots from the trunk

and main limbs. *Leaves* larger than in our other elms and less firm in texture, obovato-cuspidate, those of the young wood tricuspidate, doubly and coarsely serrated, mostly very unequal at the base, 3 or 4 inches long, strongly veined, rough on the upper side with short stiff hairs, softer and more downy beneath, most so about the ribs. *Flowers* shortly pedicellate, in small roundish tufts, larger, less crowded and paler purple than in *U. suberosa*, but, as in all our other elms, the uppermost branches are most thickly beset with blossoms. *Bracts* mostly 2 at the base of the flower-stalks, narrow, fringed and membranous. *Perianth* very rugose, its segments slightly hairy, mostly 5, often 6 or even 7, obtuse, erect or connivent, bright light purple or almost rose-colour. *Stamens* 5—7, much longer than the perianth, erect, with pale rosy filaments and dark purple anthers; *pollen* pale yellow; *stigmas* 2, bright purple, spreading and very hairy. *Samaræ* in large clusters, like hops in colour and general appearance, nearly an inch in length, obovate, quite glabrous, cloven to a very short distance from the exterior margin, not ciliated along the edges.

The wood of this species is of very inferior quality to that of *U. suberosa* and its varieties.

A remarkable fact in the natural history of the Elm is the occasional irregularity of its flowering. In 1832 scarcely a single tree was to be seen in blossom, during the spring of that year, either of *U. suberosa* or *U. montana*, both in this island and elsewhere, though in the previous season the branches were loaded with flowers, as they were again in 1840 and 1841.

The largest Wych Elm in Quarr copse, standing amidst many free flowerers of its species, has never shown any disposition to blossom, though perfectly sound and healthy.

Order LXX. AMENTACEÆ, Lindl.

——— “Habitârunt di quoque sylvas,

* * * * *

——— nobis placeant ante omnia sylvæ.”

Virg. Ecl. ii.

“*Flowers* monœcious or diœcious, rarely perfect. — *Barren flowers* capitate or in catkins; sometimes with a membranous perianth. — *Fertile flowers* clustered, solitary, or in catkins. *Ovary* usually simple. *Stigmas* one or more. *Fruit* as many as the ovaries, bony or membranaceous. *Albumen* usually wanting. *Embryo* straight or curved, plain. *Radicle* mostly superior. Young leaves with stipules.”—*Lind. Syn.*

Tribe I. SALICINÆ, Lindl.

“*Flowers* all in catkins. *Fruit* naked, two-valved, 1-celled, many-seeded. *Seeds* erect, comose.”—*Lind. Syn.*

I. SALIX, Linn. Willow.

“*Scales* of the catkins quite entire. *Perianth* 0, except 1—2 unilateral nectariferous glands between the stamens or pistil and the rachis.—*Barren flowers*:—*Stamen* 1 (of 2 combined) or 2—5. —*Fertile flowers*:—*Stigmas* 2, entire or cloven into 2. *Capsule* 1-celled.”—*Br. Fl.*

* TRIANDRÆ, Borr.

"*Stamens* 3. *Ovary* stalked, usually glabrous. *Catkins* leafy, lax; their scales persistent, of the same pale colour throughout: 'nectary double,' Leefe. *Leaves* between lanceolate and ovate, glabrous serrated. *Stipules* shorter than the petiole. *Trees* or large shrubs, casting their bark in autumn."—Br. Fl.

1. *S. triandra*, L. *Blunt-stipuled Triandrous Willow*. "Leaves serrated half-cordate approaching to reniform blunt, scales of the catkins glabrous or slightly hairy, capsule glabrous, stigma nearly sessile."—Br. Fl. p. 383. *E. B.* t. 1435 (long-leaved triandrous Willow).

In moist hedges, thickets, and margins of pools; not very unfrequent. *Fl.* April, May, and again in August? ♀.

E. Med.—Near the brook below Shanklin church, *Dr. Bell-Salter* !!! (since cut down). Hedge between Ventnor and Steephill, and by a pool on the new cut between Wootton and Newport, *idem*.

A small tree, of which I have seen the female only wild with us. *Leaves* oblongo-lanceolate, bright green, smooth and shining, with distant shallow serratures; those on the flowering branches quite entire and slightly hairy beneath. *Pistillate catkins* 1½ inch long, erect and cylindrical. *Scales* wrinkled and villous beneath at the back, nearly glabrous above, very blunt and rounded. *Gland* (nectary) very short and abrupt, as broad as or broader than long. *Stigmas* sessile, singularly bent downwards. *Ovaria* (germens) stalked, oblong-ovate, glabrous.

A valuable willow for the basket-maker, and making very neat fences.

** FRAGILES, Borr.

Stamens 2 (as in the following groups). *Trees* of considerable size, with lanceolate, glabrous, serrated, stipulated leaves, and very lax catkins, with elongated more or less stalked glabrous germens."—Br. Fl. 3rd ed.

2. *S. fragilis*, L. *Crack Willow*. "Leaves glabrous or downy beneath when young, stipules half-cordate, capsules more or less stalked, style conspicuous, stigmas bifid."—Br. Fl. p. 384. *E. B.* t. 1807.

In moist meadows and woods; I believe frequent. *Fl.* April, May. ♀.

♂. In a meadow between Ashey farm and Nunwell, two or three large trees growing near a pool.

A tall tree, with partly drooping branches, whose extremities are extremely brittle, and covered with a greenish yellow polished bark. *Leaves* lanceolate, 4 or 5 inches long, quite smooth, dark green and varnished above with pretty regular glandular serratures, paler and slightly glaucous beneath. *Stipules* half heart-shaped, strongly toothed, various in size (*Sm*). *Barren catkins* appearing with the leaves, about 2 inches long, erect or somewhat drooping, cylindrical, a little tapering and pointed, on moderately short, leafy and very hairy stalks. *Stamens* 2, little if at all exceeding the very long, narrow, pale yellow, shaggy, concave and obtuse scales, the tips of which are not coloured.

Professor Don is of opinion, from a conversation I had with him on the subject, that *S. fragilis*, *S. decipiens* and *S. Russeliana* are forms of one and the same species, of which the first may be assumed as the typical or normal one; of the last the female plant alone has been seen, in Mr. Don's opinion. The great difference in the value of these trees to the basket-maker, and in the chemical composition of their bark, is a matter of every-day observation in plants of the same species under variable conditions of soil, climate or cultivation.

*** ALBÆ, Borr.

"Trees of considerable elevation, having lanceolate serrated leaves, with long silky hairs beneath, especially in a young state, which gives to the foliage a light or whitish hue: the serratures glandular. Catkins lax: germens glabrous."—Br. Fl. 3rd. ed.

3. *S. alba*, L. *Common White Willow*. "Leaves elliptical-lanceolate regularly glanduloso-serrate acute when young more or less silky beneath often so above, ovaries ovato-acuminate nearly sessile glabrous, stigmas nearly sessile short recurved bifid, scales short pubescent at the margin much shorter than the stamens and about the length of the ovary."—Br. Fl. p. 385. E. B. t. 2430.

β. *vitellina*. "Branches bright yellow, leaves shorter and broader."—Bab. Man p. 288. *S. vitellina*, Auct. Anglican. E. B. 1389.

In moist woods, meadows, and along rivers and streams; frequent, but often planted. Fl. May. 1½.

♂. In the wet thicket on the skirts of Whitefield wood, appearing wild.

♀. In a wood near Westridge, growing in a little swampy pool, appearing also truly wild.

β. ♂. Between Ryde and Newchurch, in the hedge a little beyond Ashey farm, a single tree, apparently wild, Dr. Bell-Salter, 1839!!!—also by the stream-side at Langbridge, close to Newchurch, but apparently planted. By a pond close to a farm at Yaverland, 1840.

Leaves alternate, narrow-lanceolate, tapering at both ends, 3 or 4 inches long, regularly and finely serrated, the serratures glandular, gray-green above, whitish or somewhat glaucous beneath, clothed on both sides, but most so on the under side, with close-pressed silky hairs,* of great fineness and brilliancy, shining with a silvery lustre. Capsules ovate, brownish yellow, smooth. Seeds small, oblong, greenish and furrowed.

This species is the largest of the British willows, attaining a greater diameter of trunk than any other, and is one of the very few valuable for its wood, which, though soft, is much used for milk-pails and articles of turnery.

**** FUSCÆ, Borr.

"Small shrubs, with generally procumbent stems and leaves, between elliptical and lanceolate, mostly silky beneath, nearly entire. Catkins ovate or cylindrical. Germens silky, stalked."—Br. Fl. 3rd. ed.

4. *S. fusca*, L. *Dwarf Silky Willow*. "Leaves elliptical or elliptic-lanceolate or linear-lanceolate broadest about the middle acute entire or with minute glandular serratures somewhat downy glaucous and generally very silky beneath, ovaries upon a long stalk lanceolate very silky, stigmas bifid."—Br. Fl. p. 388. E. B. t. 1960.

β. *ascendens*. Stems recumbent, leaves elliptical. *S. ascendens*, E. B. t. 1962.†

* Varieties occur, though not noticed in this island, in which the pubescence is much less copious or nearly wanting.

† Other forms of the variable little shrub doubtless occur here, but I am not yet prepared to state them. Phytol. iii. p. 840.

E. Med.—[On the roadside between Newport and Wootton bridge, in some plenty, *Dr. Bell-Salter*, Edrs.]

W. Med.—Abundant along the roadside and adjoining heathy ground on the northern skirts of Parkhurst forest. Near Cranmore farm, by the roadside leading thence from the Ningwood road, 1844.

β. Moist thicket near Ryde, towards Newport.

The smallest of the Isle-of-Wight Willows. A humble shrub, with more or less procumbent, prostrate or even trailing branches, assuming a great variety of appearances in different situations, but the small size of all its parts will prevent its being mistaken for any other species. *Stems* procumbent, the branches long, straight, ascending or partly erect, reddish brown, downy on the flowering shoots. *Staminate catkins* numerous, crowded, erect, obtuse. *Stamens* 2, with bright yellow anthers. *Pistillate catkins* ovate, stalked (at least when full-grown). *Germens* ovato-lanceolate, often purplish, silky, on stalks nearly their own length. *Styles* very variable in my specimens, in some cloven throughout; *stigmas* bifid. *Nectary* oblong, abrupt, in ♂ greenish, in ♀ yellow. *Scales* in both sexes obovate, very obtuse or even truncate, densely silky, with brown tips, paler in the male.

***** VIMINALES, Borr.

"*Stamens* 2, distinct. *Capsules* shortly stalked or almost sessile, somewhat lanceolate, hairy or silky. *Style* conspicuous. *Catkins* lateral, nearly sessile, appearing with the leaves, with leaf-like bracteas at the base; their scales discoloured at the end. *Trees* of more or less considerable size, with long pliant branches. *Leaves* lanceolate."—Br. Fl.

5. *S. viminalis*, L. *Common Osier*. "Leaves linear or linear-lanceolate obscurely crenate white and silky beneath, stipules very small sublanceolate, ovaries almost sessile."—Br. Fl. p. 391. *E. B. t.* 1898.

In moist thickets, hedgerows, &c., but not common. *Fl.* April, May. ♀.

America, by Shanklin. Northwood park, *Miss Kilderbee*.

A small tree, readily known from our other willows by the long very narrow leaves of its wand-like often bright yellow and shining branches. *Leaves* very shortly stalked, pointed, dark green and shining above, silvery gray beneath with fine close-pressed silky pubescence, their edges a little revolute. *Catkins* cylindrical, obtuse, the staminate ones a little enlarged or clavate, sometimes rather curved, with golden yellow anthers. *Scales* ovate, rounded or slightly acuminate, brown, densely clothed with long white hairs. *Germens* quite sessile, ovato-lanceolate, silky. *Styles* rather long, crowded with the 2 linear, spreading, entire (or sometimes cloven) *stigmas*, which equal or even exceed the style in length.

6. *S. Smithiana*, Willd. *Silky-leaved Osier*. "Leaves lanceolate obscurely crenate white and satiny beneath, stipules very small narrow acute, ovaries distinctly stalked."—Br. Fl. p. 391. *S. mollissima*, *E. B. t.* 1509.

Wet woods; rare? *Fl.* April, May. ♀.

E. Med.—Wet willow-thickets in Whitefield wood, a male plant of this species (according to *Dr. Bell-Salter*), 1840. By the bridge that crosses the road near Shanklin church, on the left-hand side, *idem*.

7. *S. acuminata*, Sm. *Long-leaved Willow*. "Leaves lanceolato-oblong pointed wavy finely toothed glaucous and downy beneath, stipules half-ovate, stipules oblong or oblong-linear."—Br. Fl. p. 391. *E. B. t.* 1434. *S. rugosa*, *Bab.*?

In rather moist woods, thickets and hedges; I believe not uncommon in this island. *Fl.* April. $\frac{1}{2}$.

E. Med. — ♂. In a low wet meadow nearly opposite Redhill farm, Appuldurcombe, 1843.

W. Med. — ♀. Northwood park, Miss G. Kilderbee!

A small, sometimes, according to Smith, a lofty tree, holding a middle rank between the Osiers and Sallow tribe.

Pistillate catkins cylindrical, obtuse, not much above an inch long, slightly stalked, with several ovato-lanceolate, acute, silky bracts. *Styles* elongated, about equal to the diverging and undivided stigmas. *Germens* lanceolate, densely villous, on hairy pedicels that are much shorter than the ovato-acute, blackish, very shaggy scales. *Nectaries* narrow-oblong, abrupt and flattened.

I have only seen the pistillate plant of this species as yet.

***** CINEREE, *Borr.*

"*Stamens* 2, distinct. *Capsules* lanceolato-acuminate, silky, tomentose, conspicuously stalked; stalks 3 (or more) times longer than the nectary. *Style* none or much shorter than the ovate or oblong thick stigmas. *Catkins* sessile, lateral, at first short, afterwards more lax, appearing before the leaves; their scales discoloured at the end. *Leaves* more or less wrinkled and stippled, very veiny beneath: stipules without glands on the inside. *Trees* or low shrubs."—*Br. Fl.*

8. *S. cinerea*, L. *Gray Sallow*. "Leaves obovate obovato-elliptical or obovato-lanceolate autumnal ones pointed even serrated reticulated with prominent veins nearly glabrous and glaucous beneath with the margins sometimes recurved, stipules rounded toothed upper ones often half-cordate, style very short or none. *E. B. t.* 1897. (Autumnal leaves narrow, rigid, and their margins recurved). *L. aquatica*, *Sm.*: *E. B. t.* 1437. (Autumnal leaves broader, larger, more pliant, nearly flat). *S. oleifolia*, *Sm.*: *E. B. t.* 1402. (Aut. leaves narrower, rigid, nearly flat)." —*Br. Fl.* p. 392.

In moist woods, hedges, margins of ponds, &c.; common. *Fl.* March, April. $\frac{1}{2}$.

♂. In hedges along the Brading road from Ryde, near the second milestone, in plenty. ♂ and ♀. By some little pools near Westridge farm.

A large shrub or small tree. *Leaves* obovato-elliptical, shortly stalked, dark more or less shining green above, pale glaucous and reticulated beneath, their edges a little inflexed, in the younger adult state either quite entire and wavy or partially serrated, their upper surface nearly or quite glabrous, the under more or less pubescent. *Stipules* small, semicordate, toothed. *Scales* silky, blackish above; in ♀ rounded or obtuse, in ♂ somewhat acute. *Nectary* a single, oblong, truncate gland, green in ♂, yellower and shorter in ♀. *Staminate catkins* about an inch long, smaller and narrower than in *S. caprea*, ovato-oblong, fragrant, very downy. *Anthers* bright yellow prettily tipped with red, tinging the unexpanded catkins of that colour, and scattering a copious golden pollen. *Pistillate catkins* nearly sessile, oblong, a little tapered, with several broad leafy bracts. *Germen* lanceolate, somewhat ovate below, silky all over like its stalk, which is about half the length of the very obtuse scale. *Style* extremely short; stigmas deeply grooved on both sides,* mostly cloven at the tips, spreading.

* The thickened edges of the membrane composing the stigma gives the channelled appearance to both surfaces.

9. *S. aurita*, L. *Round-eared Sallow*. "Leaves obovate repando-dentate wrinkled with veins more or less pubescent very downy beneath tipped with a small bent point recurved at the margin, stipules roundish, style very short."—*Br. Fl.* p. 393. *E. B. t.* 1487.

β. "Leaves subrotund, hoary beneath."—*Sm. Eng. Fl.* vol. iv. p. 217.

On wet heaths and in swampy thickets; not uncommon. *Fl.* April, May. ♀.

E. Med.—Abundant in New copse, between Ryde and Wootton, and on wet heathy ground adjacent to it, 1841. Undercliff, not uncommon. (Plentiful on moist heathy ground between Briddlesford heath and the Newport and Ryde road). In a field between Shanklin and Ryde, *Dr. Bell-Salter*.

W. Med.—Wet thickets by the Medina above Newport.

β. New copse, near Wootton bridge.

A small much and irregularly branched tree or rather straggling shrub, of 4 to 8 or 10 feet high, covered with a light grayish very smooth bark, the lower branches procumbent or even, it is said, trailing, known at first sight by its usually very small, roundish, wrinkled and shaggy leaves, which appear vaulted or arched by the inflexion of their edges: I have never observed the branches to be trailing with us, though the lowermost are often decumbent at the base, or at least ascending, as the main stem itself usually is. *Leaves* very shortly stalked, various in size, in β. scarcely an inch long at most, obovate and tapering to the petiole, sometimes ovate and rounded at the base, obtuse or abrupt, with a small, short, recurved and oblique point, the surface remarkably rugose, waved and twisted, vaulted or concave on the under side by the inflexion of their margins, grayish green and very hairy above, shaggy, paler and glaucous beneath, with strong prominent veins, the edges inflexed, crisped, and according to Smith coarsely serrated, in my specimens entire or at most slightly crenulate. *Stipules* in texture like the leaves, shaggy and vaulted beneath, roundish or semicordate, obtuse or somewhat pointed, toothed or entire, very variable in size. *Scales* very hairy, rounded and obtuse, very remarkably so in the male plant. *Catkins* sessile or nearly so, slightly curved, produced just before the leaves or whilst the latter are opening, very small, the barren not much above $\frac{1}{2}$ an inch in length (in β. at least), the fertile a little longer. *Capsules* greenish or yellowish, silky, ovate, compressed, suddenly attenuated into a long beak-like form, tipped with the now slightly cleft and withered stigma. *Fertile catkins* ovate, about an inch long. *Germens* stalked, broadly subulate, sericeo-tomentose. *Styles* very short; *stigmas* simply notched, or in part considerably cleft.

Smith's description of this species is excellent throughout.

Considering the almost infinite variation to which the willows, and this tribe in particular, are addicted, the conjecture of some, that this species may be only a form of *S. caprea*, does not seem so very extravagant a supposition. It may however be observed that, besides its much smaller size, the season of flowering is at least a month later than the latter.

10. *S. caprea*, L. *Great Round-leaved Willow*. "Leaves roundish obovate or ovato-elliptical even acute at first entire downy above tomentose beneath, autumnal ones serrated and waved at the margin nearly glabrous above downy beneath, stipules somewhat reniform toothed, style very short or none."—*Br. Fl.* p. 393. *E. B. t.* 1488. *S. sphacelata*, *Sm.*: *E. B. t.* 2333.

One of the most abundant species in moist woods and hedges. *Fl.* March, April. ♀.

The male flowers of this and the other willows have a sweet resinous odour very attractive to bees, which may be seen hovering about the bright yellow catkins in March, when the air can hardly yet be called genial.

***** BICOLORES, Borr.

"Leaves glabrous or nearly so, dark green above, very glaucous beneath, between obovate and lanceolate. Germens very silky. Twiggy bushes."—Br. Fl. 3rd. ed.

11. *S. laurina*, Sm. *Intermediate Willow*. "Young leaves and shoots densely pubescent or hairy towards the summit, leaves at length glabrous glaucous beneath dull green above after being dried."—Br. Fl. p. 394. *S. bicolor*, E. B. t. 1806.

By a little pool close to Newtown, on the right-hand of the road from Shalfleet, between the town-hall and Fretlands farm, pointed out to me as this species by Mr. Borrer a few years ago. [Dr. Bell-Salter also believes that he finds it in a hedge by the side of a horse-path from Alverstone to Nunwell down.—Edrs.]

II. *POPULUS*, Linn. Poplar.

"Scales of the catkins usually jagged, very rarely quite entire. Perianth cup-shaped, oblique, entire, surrounding the stamens and pistil; nectariferous glands 0.—Barren flowers:—Stamens 4—30, —Fertile flowers:—Stigmas 2, bipartite or 3- or 4-cleft. Capsule 2-celled by the introflexion of the edges of the valves, loculicidal."—Br. Fl.

* Scales of the catkins hairy or silky. Catkins in fruit dense. Stamens 4—8. Stigmas with narrow divisions. Leuce.

+? 1. *P. alba*, L. *White Poplar Abele*. "Leaf-buds downy not visuous, leaves roundish cordate lobed toothed glabrous and shining above downy and very white beneath old ones sometimes glabrous."—Br. Fl. p. 400. Guimp. und Hayne, *Abbild. der Deutsch. Holtzart.* ii. 265, t. 202. * Fl. Dan. xiii. t. 2132 (an vera?).

β. canescens. Leaves smaller, roundish. *P. canescens*, Sm.: Guimp. und Hayne, *Abbild. der Deutsch. Holtzart.* ii. 262, t. 201. Fl. Dan. xiii. t. 2133 (an vera?).

In moist woods, meadows, hedges and banks of rivers; scarcely wild. Fl. "March, April."—Br. Fl. ½.

In a hedge near Pagham farm, betwixt Newport and Godshill, but I am not sure the only tree found there might not have been a young one of var. *β.*, in which state the leaves, as is the case with the Aspen, are angular and acute. Commonly cultivated in plantations for the beauty of its ever-changing foliage when agitated by the summer breeze.

β. Very frequent about Pagham farm in hedges, and in a small wet wood near the same, close to which, on a common, is a large tree of this species. Near Landguard farm, by Shanklin, are some fine trees, but with too much appearance of having been planted. In a low moist spot between Osborne and Beckett's

? 12. *S. Forsteriana*, Sm.

Dr. Bell-Salter found, some years ago, what he considers *S. Forsteriana*, in Northwood park, W. Cowes. As it appears to be quite a northern species, and only a single tree was detected, it was most probably introduced by some accident into the plantation there, in which willows of several kinds have been propagated. Phytol. iii. p. 840.

* And for interesting remarks on the specific identity of both forms.

copse are also some old and many young trees, apparently wild, 1839. Hedges about Greak Park farm, and in a lane leading to the Wilderness. Truly wild in Norfolk and other parts of England, and possibly so in this island.

"A great tree, "with smooth bark and spreading branches" (*Br. Fl.*) Leaves large, triangular or trowel-shaped, all deeply and conspicuously angular, toothed and lobed, the under surface snow-white.

β.* A tree of considerable size and height, usually more branched than the Aspen, the branches slenderer and less drooping at the end or recurved, the bark light gray or ash-colour, rough or chapped in old trees, smooth in the younger. In very young trees of β. the leaves are ample, trowel-shaped, sharply toothed and very hoary beneath, in which state they greatly resemble the true *P. alba*; but in the adult tree the leaves have nearly the orbicular outline of those of *P. tremula*, with the blunt sinuate toothing of the latter, retaining only the very deep blackish green above and cottony whiteness beneath, which distinguish the true *Abele*. Yet even this characteristic of hoariness is liable to alteration, for, whilst in most of its stations with us *P. canescens* retains its silvery appearance unchanged, a large tree on a common near Pagham exhibits a partial disposition to become glabrous on both sides of the leaves, as in the Aspen.

Staminate catkins slenderer than in *P. tremula*, cylindrical, pendulous, about 3½ inches long when full-blown, their axes hairy. *Floral bracts* paler than in *P. tremula*, with shorter points, and hence less palmate. *Perianth* on a shortish pedicel, smooth. *Stamens* 6—10, mostly 8 in my specimens; *anthers* dull purple.

I have not hitherto been enabled to procure pistillate catkins of the present species, to examine the number and form of the stigmas, the few trees producing those of either sex being some very tall individuals near Osborne park, and quite out of reach, from their height. The species creeps so amazingly by the root that it is not surprising it should rarely produce flowers, which is however no proof of its not being indigenous with us, since in the N. of Europe the common Ivy is for the most part barren, though truly native.

2. *P. tremula*, L. *Asp* or *Aspen*. *Trembling Poplar*. *Vect. Apse. Pipple*. "Leaf-buds glabrous shining slightly viscous, leaves nearly orbicular and bluntly sinuate-toothed soon glabrous on both sides, fertile catkins as large as the barren ones, scales of both deeply palmatifid and sericeo-pilose, stigmas (purple) cuneate irregularly 3—4 lobed."—*Br. Fl.* p. 400. *Loud. Arb. Brit.* iii. p.

* [In this case, as in some others (see *Ribes rubrum*, p. 188, foot-note), the author almost exclusively confines his elaborate description to that form of the species which only he believes wild.—*Edrs.*]

† On this individual most of the leaves are nearly devoid of their usual hoariness, but the extreme leaves on the twigs preserve it in a considerable degree, and all present visible traces of their appropriate cottony covering in patches of variable extent, like spots of mildew, on their under surface; yet this deficiency is unaccompanied by any change in the shape of the leaves, beyond the variations in these organs incidental to the normal form. This state of the variety appears to make a nearer approach than usual to *P. tremula*, to which it seems to be as closely allied as to *P. alba*. It is doubtless the *P. canescens* β. *intermedia* of Merat, *Nouv. Fl. des Env. de Paris*, p. 400, and which he suspects may be a hybrid between that and *P. tremula*. See also Lejeune, *Fl. de Spa*, p. 260, who looks upon it as more nearly allied to *P. tremula*, *P. alba* γ. *denudata*; Spenner, *Fl. Frib.* (teste Gaudin), *P. sericea*; Long. *Peterm. Fl. Lips. Excurs.* p. 277.

P. alba and *P. tremula* are, it must be confessed, by no means clearly defined, and, unless the difference in the number and form of the stigmas prove constant in each, which they are said not to do, I know of no permanent marks of distinction. [For further remarks, both on this point and the distinctions between the two varieties of *P. alba*, see *Phytol.* iii. pp. 841—846.—*Edrs.*]

1645. fig. 1509. *Fl. Dan.* xiii. t. 2134. *Guimp. und Hayne, Abbild. der Deutsch. Holtzart.* ii. 266, t. 203.

In moist woods and thickets, especially in a stiff clayey soil; frequent. *Fl.* February, March. *Fr.* May. $\frac{1}{2}$.

E. Med.—Abundant in Quarr copse, and on the wet slipped land along the shore between Ryde and the Priory, &c. Shanklin chine. About Aldermoor common, frequent. In Firestone copse. In Beckett's or Buckett's copse, between Osborne and Barton farm, are some very fine aspens, of great height and size.

W. Med.—Frequent about Cowes. Stopler's copse, Nunswood copse, and elsewhere about Yarmouth, abundantly.

A tree, with us, in the wild state usually rather under the middle size, with a straight and slender trunk for its height, long, flexile, smooth and ash-gray branches, of which the lowermost at least are pendulous, the bark on young trees white and smooth, the older ones grayish, chapped or rifted. *Leaves* alternate, when young roundish ovate or subdeltoid, pointed or even acuminate, sharply and unequally sinuato-dentate, tinged with reddish brown, and as well as the petioles clothed with close-pressed silky pubescence, especially beneath; at length glabrous, nearly orbicular, from about $1\frac{1}{2}$ inch to $2\frac{1}{2}$ inches wide, and scarcely if at all longer, broadly, unequally, shallowly and very obtusely sinuato-dentate, the teeth rounded, or towards the slightly cordate or truncate base somewhat incurved or uncinate, dull bright green above, paler beneath, slightly acuminate, the margins somewhat fringed with soft downy hairs. *Petioles* 1 inch to $2\frac{1}{2}$ inches long, at length glabrous, strongly compressed laterally. *Stipules* long, linear or subulate, soon falling. *Flowers* produced before the leaves from brown, shining, scaly and glutinous buds* at the end of short lateral spurs or shoots, which are sometimes hairy at the tips. *Staminate catkins* stouter and more lax than the pistillate, expanding a little earlier, sometimes nearly 3 inches long, hoary, not rufous, their axes downy. *Floral bracts* as in the pistillate. *Perianth* much more oblique, scarcely at all tubular, very evidently pedicellate. *Stamens* in some of my specimens about 10 or 12, in others 6 or 8; *anthers* bright purplish, of 2 distinct oblong lobes bursting by a deep lateral fissure; *pollen* white, globular. *Pistillate catkins* 2—5 together, oblong or at length cylindrical, drooping, rufous-gray, scarcely 2 inches long when full-grown, very silky, their *scales* (or *bracts*) wedge-shaped, blackish brown or fuscous, deeply palmato-laciniate, with acute thickly fringed segments, longer than the smooth pale-green perianth, which is on a very short and, like the axis, hairy pedicel. *Germen* as long as the perianth, ovato-globose, smooth, with a furrow on each side. *Stigmas* 4, bright crimson, nearly erect, slightly diverging only in two pairs, each (in all the specimens I can collect in this island) expanded into a broad, irregular, waved and crenate lobe, in shape resembling a cock's-comb or the fleshy inflorescence of *Celosia cristata*. *Capsules* much like those of some willows, ovato-oblong, laterally compressed, green and glabrous, about 3 lines in length; in all the specimens I have examined filled merely with a white cottony down, or producing 1 or 2 oblong and apparently imperfect seeds, of a pale yellowish colour and downy.

I found in a male catkin of this species, from Beckett's copse, near Cowes, in March, 1843, several hermaphrodite flowers, the stigmas in which were fully formed and of the usual size.

The difference in the shape of the stigmas from that usually assigned them, and as represented in the figures referred to, only prove how variable are these organs as regards form, and perhaps, as we shall see, in respect of number also. In my specimens the stigmas are constantly 4, but instead of being linear or awl-shaped, as Smith describes and Sowerby figures them, they are invariably lobed and notched as above stated. In the plate of this species in *Fl. Danica* the stigmas approach those of my specimens in form, but are much more simple or

* I have observed these buds to smell strongly of malt.

regular, widely spreading and even reflexed, scarcely at all lobed, nor are they, any more than in mine, furnished with a basal auricle like those mentioned by Smith and drawn in 'English Botany.' In this last work the floral bracts are in the separate figure represented as glabrous, doubtless through the omission of the engraver.

Sir W. Hooker, in his 'British Flora,' remarks that the Scottish Highlanders entertain a superstitious reverence for the Aspen, believing our Saviour's cross to have been made of its wood, in consequence of which its leaves can never rest;* but a more unlikely tree than this can hardly be imagined to inhabit the warm and dry region of Judæa, where, if existing at all, it must be sought for exclusively on the highest mountains. So closely allied are Ignorance and Superstition, that enlightening the one is the only sure way to eradicate the other.

The provincial word Apse, for this tree, gave rise, I presume, to the names of several places so called in this island, as Apse farm, Apse heath, &c.

** *Scales of catkins glabrous, ciliated at the apex. Catkins in fruit lax, moniliform. Stamens 8—30. Stigmas reniform or roundish, crenated, sometimes 2-lobed at the apex. Aigeiros.*

† 3. *P. nigra*, L. *Black Poplar*. "Leaf-buds glabrous viscous, leaves ovato-deltoid or rhomboid cuspidate pointed crenate or serrated quite glabrous on both sides, stipules ovate acuminate stigmas roundish 2-lobed at the apex."—*Br. Fl.* p. 401. *E. B.* t. 1910. *Guimpel. und Hayne, Abbild. der Deutsch. Holtzart.* ii. 268, t. 204.

On the banks of rivers and in moist low ground, but doubtful if really indigenous. *Fl.* April. ½.

E. Med.—On the point (Watch-house point) near the Priory, but probably planted; also on wet clay along the shore between Sea View and the mouth of Brading harbour. Near Steephill, apparently wild, and a tree or two between Ninnham farm and the Newport road, in the wooded ground along the brook, to all appearance of natural growth; as also on wet land near the shore a little W. of Cowes. A few trees in a wood near Cliff farm, but very uncertainly indigenous, as a solitary horse-chestnut† grew in the same wood.

W. Med.—A tree or two near Medham.

* A similar superstition is prevalent in Wales, which is beautifully adverted to by Mrs. Hemans in her poem of the 'Wood Walk and Hymn':—

——— "Oh! a cause more deep,
More solemn far, the rustic doth assign
To the strange restlessness of those wan leaves!
The cross he deems, the blessed cross, whereon
The meek Redeemer bow'd his head to death,
Was framed of Aspen wood; and since that hour
Through all its race the pale tree hath sent down
A thrilling consciousness, a secret awe,
Making them tremulous when not a breeze
Disturbs the airy thistle down, or shakes
The light lines of the hairy gossamer."

† I have sometimes thought that exotic occasionally propagates itself spontaneously in this country.

Tribe II. *BETULINÆ*, Lindl.

"Flowers all in catkins. Fruit naked, indehiscent, membranous, 2-celled, with solitary ovules. Seeds pendulous, not comose."—Lindl. Syn.

III. *BETULA*, Linn. Birch.

"Barren flowers:—Perianth 0. Stamens 8—12, with 2—3 small scales at the base (indicating 2—3 flowers, each of 4 stamens).—Fertile flowers:—Scale of the catkin 3-lobed, 3-flowered. Perianth 0. Fruit with a membranaceous margin."—Br. Fl.

1. *B. alba*, L. *Common Birch*. "Leaves ovato-deltoid acute doubly serrated, fruit broadly obovate with a broad margin."—Br. Fl. p. 379. E. B. t. 2198. Fl. Dan. ix. t. 1467.

In moist as well as in dry heathy or hilly woods and copses; frequent. Fl. April, May. h.

E. Med.—Quarr copse, &c. Plentiful on the hill at Apse castle. Youngwood's copse, by Newchurch, in plenty. Copse close to Kempshall farm, on the North side, opposite Stroud wood, from which it is only separated by the road from Aldermoor mill to Coppid hall, in some plenty, but possibly planted, 1850.

W. Med.—Marvell copse, near Newport, consists in a great measure of this tree, of which there are many apparently very aged and tolerably fine specimens. Wood along the new cut between Newport and Ryde.

A tree, in more northern climates, of very large size, 70 or 80 feet in height, in this island of but moderate stature, seldom exceeding 30 or 40 feet, the trunk slender in proportion and covered with a whitish ash-coloured bark, transversely banded with purplish brown, which detaches itself in broad plates, the branches very numerous, alternate or irregular, tough, dark purplish, very slender, twiggy and flexible at their extremities. Leaves* alternate, in pairs from the same bud, glutinous and somewhat hairy when young, liable to some variation in shape, commonly ovate or somewhat deltoid, very acute, unequally, doubly and sharply serrated, entire at the base, with straight parallel ribs, bright shining green above, paler and somewhat hairy beneath about the midrib and along the petiole, and having both surfaces sprinkled with minute resinous dots, making them roughish and clammy to the touch, especially when young. Catkins opening with the leaves and fully expanding with them about the third week in April. Staminate catkins terminal, solitary or clustered 2 or 3 together, sessile, lax or pendulous, from about 1½ inch to 3 inches long and about 2 lines in width, cylindrical, slender, obtuse. Floral bracts (scales) closely imbricated, peltate, the central bract flat, roundish rhomboidal or nearly orbicular, somewhat pentagonal, sometimes slightly pointed and mucronulate, brownish at the apex, their margins fringed; the 2 lateral bracts nearly concealed beneath the former, close under and parallel with them, their margins only projecting on either side, flat and roundish, but thinner and more membranaceous, erose and ciliated on the margins. Perianth

* The leaves of the Birch afford nourishment to the larva of the Camberwell beauty (*Vanessa Antiopa*), one of our rarest and most elegant butterflies, the periodical appearance of which in Britain is a matter of curious speculation to the naturalist. In 1839 several specimens were seen in Quarr copse by different persons, and one was captured in the same wood by my servant, but escaped in his endeavour to secure the prize.

none,* unless we consider as such three vaulted, nearly orbicular, membranous bracts beneath the larger peltate scale, the middle one uppermost projecting horizontally forwards beneath the scale and mostly somewhat pointed, each of them subtending and partially enfolding (4?) stamens, in which case each of the scales represents a flower, and the bracts, from analogy with those of the pistillate catkins, must be considered as 3-flowered. *Stamens* 10—12, in 3 indistinct sets at the base of each bract; *filaments* short; *anthers* large, yellow or purplish. *Pistillate catkins* solitary from the bosom of the leaf buds and between a pair of leaves, stalked, nodding or inclining, from about $\frac{1}{2}$ to $\frac{3}{4}$ ths of an inch in length and about a line in breadth, cylindrical, blunt, slightly curved, their peduncles about $\frac{1}{2}$ an inch long, with 3 oblong or lanceolate, unilateral, pale bracts towards the middle, the central and innermost one floriferous in the axil. *Floral bracts* (scales) erecto-patent, 3-flowered, pale green, glabrous, 3-lobed, the middle lobe very broadly ovate or elliptic, very obtuse and rounded, somewhat recurved at the tip, which is entire or prolonged into a fleshy mucro, the lateral lobes minute, roundish. *Styles* simple, bright purple, fleshy, glabrous, as long as the bracts.

The twiggy branches are much in demand for making brooms, and, as Sir W. Hooker observes, "well-known instruments of castigation," now, happily for the credit of the age in which we live, seldom resorted to, except in those monkish seminaries of sound learning, rightly so called (*vox et præterea nihil*), our great public schools.

IV. ALNUS, Tourn. Alder.

"*Barren flowers* :—*Scale* of the *catkin* 3-lobed, with 3 *flowers*. *Perianth* 4-partite. *Stamens* 4.—*Fertile flowers* :—*Scale* of the *catkin* subtrifid, with 2 *flowers*. *Perianth* 0. *Ovary* with 4 minute scales at its base. *Fruit* without a membranaceous margin, compressed."—*Br. Fl.*

1. *A. glutinosa*, Gært. *Common Alder*. "Leaves roundish-cuneiform obtuse lobed at the margin and serrated somewhat glutinous downy in the axils of the nerves beneath."—*Br. Fl.* p. 380. *Betula Alnus, L.*: *E. B. t.* 1508.

In marshy and boggy ground, wet meadows, and on the banks of rivers and streams. *Fl.* March. $\frac{1}{2}$.

Plentiful about Alverstoke mill. Alder Carrs, near Ninham farm, &c.

A tree, usually of small or medium size, at other times 60 or 80 feet in height, with widely spreading horizontal branches, and reddish or grayish bark rough on the trunk, that of the branches smooth, and of the smaller ones rusty brown, with a partially glaucous cuticle. *Leaves* from purplish blue and glaucous buds, bright green, somewhat glutinous and shining, 2—4 inches long, obovato-rotundate, somewhat cuneate at the base, irregularly crenato-serrate, slightly lobed and

* The three lower scales (situated beneath the larger peltate bract and its two subsidiary ones, lying immediately under it in the same plane) may fairly be considered, with Wahlenberg and others, as each analogous to or in the place of a perianth, since these three inferior scales are nearly perpendicular to the true bracts, and unilateral on the short stalk that carries the latter, are concave and partly embrace the stamens, a third part of which (or about 4), is subtended by each scale, so that by analogy with the fertile catkins the uppermost or real bracts are each 3-flowered, with this difference only, that in the bracts of the pistillate catkins the middle and side lobes are united into one piece, whilst in the staminate catkins the three lobes are separate and distinct, in both kinds covering a ternary group of flowers, which in the pistillate catkins are naked, in the staminate furnished with a rudimentary floral envelope to each in the shape of a hollow scale.

waved, glabrous, on grooved *petioles*, about an inch in length, running along the under side of the leaf into the very prominent midrib, with straight parallel veins and small tufts of hairs in their axils. *Stipules* ovate or lanceolate, entire, deciduous. *Staminate catkins* in terminal, forked, paniculate clusters of 4—8, on rounded furfuraceous-scabrous stalks, at first purplish and erect or nodding, when full-blown pendant, cylindrical-obtuse, 2—4 inches in length, glabrous. *Scales* rusty red or purple, roundish, of 1 principal and 3 lateral mostly 2-lobed smaller pieces or segments, each of which last covers a solitary sessile flower. *Perianth* greenish, deeply 4-cleft, roundish or obovate, concave and unequal. *Stamens* 4, opposite to and shorter than the perianth, inserted near its base, sometimes surrounding an imperfect germen; *anthers* 2-lobed, yellowish or reddish, with copious pale-yellow pollen, made up of transparent polyhedral granules. *Pistillate catkins* about 2, 3, or 4 together, in similar clusters to the staminate and immediately beneath the latter or partly interspersed amongst them, scarcely $\frac{1}{4}$ th of an inch long, ovate and erect, their scales dark red, closely imbricated, broadly ovate, fleshy, smooth and somewhat pointed, 2-flowered, persistent and at length woody. *Perianth* none. *Styles* 2, pale crimson, rounded, fleshy and tapering, erect or slightly spreading, much longer than the scales. *Germen* green, compressed.

Tribe III. MYRICEÆ, Lindl.

"Flowers all in catkins. Fruit drupaceous, surrounded by the scales of the ovary, become fleshy and adherent."—Lindl. Syn.

V. MYRICA, Linn. Gale.

"Scales of the catkins concave.—Barren flowers:—*Stamens* 4 or 8.—Fertile flowers:—*Stigmas* subulate. *Hypogynous scales* sessile, without a gland on the inside."—Br. Fl.

1. M. Gale, L. Sweet Gale. Dutch Myrtle. Golden Withy. Vect. Sweet Withy. Golden Osier. Leaves oblongo-lanceolate or subcuneate distantly serrated above, drupes tricuspidate in oblong clusters. E. B. t. 562. Br. Fl. p. 378.

In spongy bogs and wet thickets. Fl. April. $\frac{1}{2}$.

E. Med.—Plentiful in Apse-heath withy-bed, also at the upper end of Sandown level, and on the boggy skirts of Lake common. About Blackpan. Thicket above Alverstone mill. At the foot of Hill Heath or Hill Side, near Newchurch. Bordwood lynch. Profusely in a tract of peaty bog not half a mile N. of Godsbill, a little beyond Munsley hill. Large willow-thicket by Budbridge farm, 1848. Peat-bogs along the Medina between Cridmore and Rookley. In boggy meadows along the Medina and Main river, abundant in many places.

A bushy shrub, from 2 to 6 feet in height. *Stems* often ascending and decumbent below and rooting, rather slender, covered with an ash-gray or reddish warty bark, and with numerous twiggy branches of a reddish brown colour. *Leaves* about 2 inches long, of a rather glaucous green, paler beneath, oblongo-lanceolate, with shallow, distant, teeth-like serratures at their tips, and tapering into the very short *petioles*. *Staminate catkins* erect, cylindrical, not an inch in length. *Scales* broadly ovate, concave, pointed, slightly fringed with woolly hairs, widely spreading when in flower, reddish at the tips. *Stamens* usually 4 at the base of each scale; *filaments* very short; *anthers* erect, reddish, of 2 oblong deeply divided lobes; *pollen* copious, bright sulphur-yellow, fragrant. *Pistillate catkins* scarcely $\frac{1}{4}$ th of an inch long, ovate, erect, their scales dark red, the lower ones fringed, shorter than the fleshy, purple and spreading styles. *Drupes* crowded into little ovate or oblong sessile clusters, covered with yellow odoriferous globules, very small, longer than the persistent perianth, greenish yellow, sublunato-orbicular, tricus-

pidate, the middle point running down into a keel along each face of the drupe. Seed erect, obovate, pointed at the upper end, which is produced into the central cusp.

Individuals of this species are said occasionally to be monœcious. Like many other diœcious plants, the male is commonly the more abundant.

The wood of the Sweet Gale is quite inodorous, but the leaves emit, when bruised, an agreeable spicy fragrance, partaking of ginger and clove with a mixture of bitter aroma, which, together with its peculiar willow-like aspect, readily account for the names it bears in this island. It is far more generally distributed in the N. of England and Scotland than with us, but attains to greater dimensions in this island than I have ever seen it elsewhere, and occasionally assuming a more vivid green, when it has at a little distance somewhat the appearance of small bushes of *Arbutus Uredo*.

Tribe IV. CUPULIFERÆ, Lindl.

"Male flower in a catkin. Female flower solitary or aggregated or spiked. Perigone adnate to the ovary, with a denticulated limb, sometimes evanescent, surrounded by a coriaceous involucre."—Lindl. Syn.

VI. CORYLUS, Linn. Hazel.

"Barren flowers in a cylindrical catkin: its scales 3-cleft, middle lobe covering the 2 lateral ones. Perianth 0, except the 2 inner collateral scales of the catkin, which cohere at their base to the outer one (or true scale). Stamens 3. Anthers 1-celled:—Fertile flowers 1—2 together within a minute involucre of 2—3 cohering lacerated hairy scales, the whole collected into a short gemmaceous bracteate catkin. Perianth closely investing the ovary, and scarcely distinguishable from it. Stigmas 2, filiform. Nut invested with the enlarged, united scales of the involucre, which are coriaceous at the base, and leafy and lacinated at the summit."—Br. Fl.

1. *C. Avellana*, L. Common Hazel. "Stipules oblong obtuse, leaves roundish-cordate pointed, involucre about the length of the fruit unarmed campanulate 2—3 partite rather spreading torn at the margin."—Br. Fl. p. 404. E. B. t. 723.

In woods and hedges; abundantly. Fl. February, March. Fr. September, October. $\frac{1}{2}$.

A large shrub or small tree, with a smooth gray or partly reddish brown bark, the tips of the branches and flowering shoots setose and downy. Staminate catkins pendulous, cylindrical, 2—4 inches long, 2, 3, or more together on short lateral shoots, conspicuous in early spring by their pale greenish yellow colour; their scales wedge-shaped, downy, 3-lobed, the middle lobe largest and covering the other two, with a small purplish point. Stamens mostly 8; anthers pale yellow, oblong, slightly hairy at the top, scattering a copious sulphur-yellow pollen. Pistillate flowers aggregated in solitary, sessile, remote, scaly buds, exactly like those of the leaves, from which the protruded crimson stigmas alone distinguish them.

VII. QUERCUS, Linn. Oak.

"*Barren flowers* in a lax catkin or spike, without scales. *Perianth* single, 5—7 cleft. *Stamens* 5—10. *Anthers* 2-celled.—*Fertile flowers* aggregated or in a lax spike. *Involucre* 1-flowered, of many little scales united into a cup. *Perianth* single, closely investing the ovary, 6-toothed. *Ovary* 3—4 celled. *Style* short. *Stigmas* 3—4, oblong, compressed. *Nut* (or acorn) solitary, surrounded at the base by the enlarged cup-shaped indurated involucre."—*Br. Fl.*

1. *Q. Robur*, L. *Common British Oak*.^{*} "Leaves deciduous very shortly stalked oblongo-obovate deeply sinuate, their sinuses acute, lobes obtuse, fruit 2—3 upon a mostly elongated peduncle."—*Br. Fl. E. B. t.* 1342. *Br. Fl. p.* 403. *Q. pedunculata*, Willd.

In woods, coppices and hedgerows; abundant. *Fl.* April, May. $\frac{1}{2}$.

Woods, hedges, &c., everywhere. Some of the finest Oak-timber in the island grows at Nunwell, where are many noble trees of this species, of very great but not extraordinary dimensions.

Leaves alternate, somewhat crowded at the ends of the twigs and appearing as if fasciculate, firm, deep green and more or less shining above, pale and whitish beneath, usually quite glabrous, on very short grooved petioles or subsessile, oblong or obovato-oblong in outline, deeply and unequally sinuate-lobed, the lobes entire, very obtuse and rounded, not mucronate, the corresponding lobes on each side seldom exactly opposite one another and usually of very unequal size, the margins of the lobes often deflexed, and the entire leaf concavo-convex or vaulted, sometimes quite flat, but in general the surface is more or less undulating, curled or twisted; *base* of the leaves mostly unequal, attenuate and rounded, with a deep round notch or sinus on each side of the petiole, forming two lobes or auricles: the leaves of this species usually lie in plains variously inclined to one another, and this, together with their wavy surface, convexity and irregular sinuosity, combine to give an appearance of scrubbiness to the foliage as compared with the next. *Acorns* solitary, in pairs or clustered on a common erect or lax peduncle, varying in length from 1 inch or under to 4 or 5 inches, ovoid-oblong or elliptical-oblong. *Cup* hemispherical, covered with numerous small, close-pressed, imbricating, ovate or oblong scales, that are minutely pubescent and ciliated.

2. *Q. sessilifolia*, Salisb. *Sessile-fruited Oak*. *Chestnut Oak*. *Vect. Maiden Oak?* Leaves deciduous very distinctly petiolate oblong-obovate deeply sinuate or sinuato-pinnatifid, the sinuses for the most part somewhat acute, lobes rounded obtuse, fruit clustered on a short erect stalk or sessile or both, cup of the acorn hemispherical scaly (pubescent?) *Scensk. Bot. ii. t.* 73. *E. B. t.* 1845. *Q. Robur*, L., β .: *Br. Fl. p.* 403. *Q. intermedia*, D. Don.

β . Leaves downy underneath.

In woods; rare? *Fl.* April, May. *Fr.* September, October. $\frac{1}{2}$.

E. Med.—A single tree on the edge of Quarr copse, by the side of the Newport road, 1844. In East-Standen copse, 1845. On Bordwood forest, abundantly, W. Borrer, Esq., 1844.

^{*} Trans. of Bot. Soc. of Edinb. vol. i. p. 65, 'On the Botanical Character of the British Oaks,' by R. K. Greville.

W. Med.—A very fine round-topped tree in Elm copse, between Shalfleet and Calbourne, preserving exactly the characters of the Bordwood Oak, 1844.

β. Near Shalfleet.

Distinguishable in its most defined form from *Q. Robur* by its usually larger and broader, flatter and more regularly spreading or imbricating leaves, which are distinctly petiolate, the petioles yellowish or reddish, in general of a lighter more shining green, sometimes however dark green, for the most part obovate rather than oblong, less deeply, more regularly and evenly sinuate, the sinuses more exactly opposite and inclined to acuteness at bottom rather than to be rounded or obtuse; by a greater massiveness of foliage and compactness of the whole tree, which is, I think, more disposed to assume a rounded head; by its more horizontally spreading less tortuous branches and spray, larger sized leaf-buds, and essentially by bearing acorns that are either quite sessile or wholly or in part on short, erect, stout peduncles, and in general more numerous clustered. The bark is thought to be lighter coloured, and the leaves more apt to be persistent through the winter: I think I have remarked the former to be smoother on young trees, at least than in *Q. Robur*. The acorns of the present species are rather ovoid than oblong, the cup approaching to one-half the entire length of the gland; they are stated moreover, when ripe, to have very generally a red or pinkish colour. All these characters are liable to great exception, fluctuating so variously between those laid down for the two species as fairly to induce suspicion of their being really distinct as such. Still, as Mr. Bree truly observes, "though there are sessile oaks bearing fruit or peduncles, and pedunculated oaks bearing almost sessile fruit, there is yet a certain indescribable something about the trees, by means of which I can always distinguish each, without minutely examining either the acorns or the leafstalks."*

The present is certainly the handsomer tree of the two, with a certain faint approach to the sweet or Spanish Chestnut in aspect, and it is said in the appearance and quality of the wood likewise, having, it would seem, been commonly mistaken for that of the former in the timber of some of our oldest edifices. This species approaches in aspect more nearly to some of the American oaks than our commoner kind does.

The characters distinguishing *Q. sessiliflora* which I have found most constant are those of the fruit- and leaf-stalks, for though the acorns are often elevated on a very distinct peduncle I have never seen the latter anything like so slender and elongated as in *Q. Robur*, notwithstanding that this last sometimes bears its acorns on an abbreviated stalk very similar to the occasional one of *Q. sessiliflora*. The leaves in *Q. Robur* are most commonly very unequal at the base, with so deep a notch or sinus on one or both sides of the petiole as to appear auricled; in *Q. sessiliflora* the base of the leaf is more equal, and the notch, if any exist, very shallow. In the former, too, the leaves are waved and stand out at various angles to one another; in *Q. sessiliflora* the leaves are remarkably flat, and lie over each other in a horizontal position and in parallel planes.

I suspect *Q. sessiliflora* is always a smaller tree than our common Oak; nor can I by any means agree with Fries ('*Novitiæ*') in thinking that the differences between the two are owing to poorness of soil, as he confidently affirms.†

VIII. FAGUS, Linn. Beech.

"Barren flowers in a globose catkin. Perianth campanulate, 6-cleft. Stamens 8—15. Anthers 2-celled. — Fertile flowers 2 together within a 4-lobed involucre. Perianth urceolate, with 4—5 minute lobes. Ovary incorporated with the perianth, 3-celled, 2

* Loud. Arb. Brit. vol. iii. p. 1738.

† [For a further exposition of the author's views respecting our British oaks, see Phytol. iii. pp. 882—884.—Edrs.]

becoming abortive. *Stigmas* 3, filiform. *Nuts* triquetrous, in pairs within the enlarged prickly involucre."—*Br. Fl.*

1. *F. sylvatica*, L. *Common Beech*. "Leaves ovate glabrous obsoletely dentate, their margins ciliated."—*Br. Fl.* p. 402. *E. B. t.* 1846.

In woods and on steep chalky hills; not unfrequent. *Fl.* May. *Fr.* September, October. $\frac{1}{2}$.

E. Med.—On the down above Nunwell. In Cowpit-cliff wood. By Godshill. East-end, indigenous? Cleveland wood, abundantly; indigenous? Appuldurcombe park, but perhaps planted.

A beautiful and stately tree, from 50 to 80 or 100 feet high, with roots running nearly horizontally or even partly above the surface, the bark very smooth, cinereous, the extremities of the spreading crooked branches virgate, flexuose, emitting at each angle of flexure a solitary, alternate, linear-lanceolate, acute leaf-bud about $\frac{3}{4}$ ths of an inch in length. *Leaves* from about $1\frac{1}{2}$ or 2 to $3\frac{1}{2}$ or 4 inches long, and from 1 to $2\frac{1}{2}$ or 3 inches wide, bright (often deep) green above, paler beneath, firm or subcoriaceous, shining and glabrous when young, sprinkled with silky hairs, varying in form from ovate to elliptical or even inclining to lanceolate, ovate or somewhat acuminate, sometimes bluntish, obsoletely sinuato-dentate and waved along the margin, which is fringed with fine white silky hairs; more rarely distinctly and acutely dentato-serrate, rounded or tapering and wedge-shaped, often oblique at the base, the disk subplicate, with straight parallel ribs hairy along their prominent under side, and with small silky tufts in their axils. *Petioles* very short, 4 or 5 lines in length, silky-pilose, rounded. *Stipules* long, linear-lanceolate, pale tawny, very thin and membranous, caducous. *Staminate flowers* in small, pale greenish yellow, loosely subglobose and somewhat compressed catkins, about $\frac{1}{2}$ an inch in diameter, pendulous from common, compressed, very silky peduncles, of about $\frac{1}{2}$ to $1\frac{1}{2}$ inch in length, 3, 4, or 5 together from the same buds as the leaves, and having mostly one or two linear, deciduous, tawny bracts a short distance below the flowers. *Perianth* shortly pedicellate, very silky, campanulate, cleft, the segments acute. *Stamens* 5—12 (*Sm.*), mostly about 9 (?) a little longer than the perianth; *anthers* elliptic-oblong, greenish yellow, 2-celled, bursting laterally; *pollen* pale yellow. *Pistillate flowers* situated just above the staminate, terminal or subterminal, their common involucre usually solitary or on an erect, stout, silky and bluntly angular peduncle of about $\frac{1}{2}$ an inch in length; subglobose, thick and leathery, deeply cleft into 4 roundish lobes closing over the two included germens, silky tomentose within, beset externally with numerous patent, spreading or recurved, subulate scales, of a light purplish colour and downy, flat, soft and pliant, and which cannot therefore be called prickles, but more resemble the involucre bracts of many Compositæ. *Germens* 2, greenish, sessile, ovate and acutely triquetrous, with depressed sides and thin prominent angles; a little silky above, closely applied to each other by one of their faces, and crowned by the 6 erect, subulate and downy segments of the closely investing or adnate calyx. *Stigmas* 3, greenish, subulate, spreading and recurved, protruded from the involucre. *Nuts* 2, chestnut-brown, rather more than $\frac{1}{2}$ an inch in length, ovoid and acutely triquetrous, the angles winged above the depressed faces, somewhat grooved and in their upper part silky pubescent, and penicillate at the apex; firmly enclosed in the enlarged, much-indurated, almost woody and capsule-like involucre, which is covered with a tawny pile, its segments at length widely spreading or reflexed. *Cotyledons* large, fleshy, conduplicate, plaited. The nuts are often abortive, though the testa appears as large and well filled as usual, but on being broken open no trace of any portion of the seed is to be found excepting the hairy funiculus.

I have sometimes suspected the Beech might not be truly indigenous in this island, though unquestionably so on the mainland of Hampshire, where, as in Sussex and other southern counties of England, it forms vast natural woods of great magnificence and beauty, which, from their occupying in general the sloping

sides of the chalk ranges, are familiarly called *hangers*. In these places the tree is essentially gregarious in its habit, covering large tracts of ground and taking entire possession of the soil; here, on the contrary, except where evidently planted, it prevails sporadically, not evincing the same power of occupying, or disposition to extend itself in masses.

The silence, loveliness and gloom that reign within the deep recesses of large Beech woods almost transport the wanderer in idea to the primæval forests of the Western World.

I am not disposed to attach the least importance to the assertion of Cæsar, so often quoted in proof of the subsequent introduction amongst us of this tree, that he found no Beech-timber in Britain. I feel an unwillingness to let the decision of the question rest on a single word in the 'Commentaries,' which, supposing it to refer solely to the subject before us, of which I am by no means convinced, may have crept into the text, as at present received, through the ignorance and carelessness of transcribers or the emendatory zeal of early commentators. Nature herself contradicts the assertion in the exuberant profusion of Beech-wood with which she has clothed our hills, and this, together with the known distribution of the same tree in other parts of Europe, leaves us little cause for hesitation in choosing between the evidence of our senses on the one hand, and the dictum probably mistranscribed or misunderstood of a fallible and remote authority on the other.

There is a remarkable specimen of the rough-barked Beech in the New Forest, on the Southampton and Christchurch road. The tree, which is of considerable size and height, but entirely bereft of its lower branches, stands about 100 yards from the road on the right-hand side going towards Christchurch, and within 500 yards of the turnpike-gate out of Lyndhurst, and is an object of curiosity and attention to numbers passing that way.

Castanea vesca (the Common Sweet or Spanish Chestnut) is here omitted, from a conviction that it cannot with propriety be comprehended in the Isle-of-Wight Flora, though found in situations, with us, to all appearances as perfectly natural as in any part of the kingdom. In Lorden copse, near Shorwell, are several trees, of considerable girth and of evidently great age, which in some seasons produce small but well-flavoured fruit, as I learn from the country people, though in less favourable years the nuts form but do not fill in the shell. We have just seen however that even in the Beech the fruit is not always perfected, perhaps from defective impregnation, as is often the case in plants with diclinous flowers.

[Subclass II. GYMNOSPERMÆ.*]

"Seeds quite naked."—(*Gymnogens*).—Bab. Man.

Order LXXI. CONIFERÆ, *Juss.*

"Monœcious or diœcious, without a perianth. *Barren flowers* in a deciduous *catkin*; scales peltate or erect, shortly stalked or sessile, bearing near the base at the edge, or on the under side, 2 or more distinct *anther-cells* (2 or more monadelphous *stamens*, each with a single 1-celled anther?).—*Fertile flowers* generally in many- or few-flowered *cones*, sometimes solitary."—*Br. Fl.*

I. TAXUS, *Linn.* Yew.

"Diœcious. *Barren flowers* in oval *catkins*, surrounded at the base with imbricated bracteas, of which the inner ones are larger; *scales* crowded, peltate, with 3—8 *anther-cells* on the lower surface.—*Fertile flower* a solitary erect *ovule*, seated on a fleshy disk, with a few imbricated scales at the base. *Seed* solitary, bony, contained in an open fleshy cup-shaped receptacle, resembling a *drupe*."—*Br. Fl.*

† 1. *T. bascata*, L. *Common Yew*. "Leaves 2-ranked crowded linear acute, flowers axillary sessile." — *Br. Fl.* p. 408. *E. B. t.* 746.

In steep hilly and rocky woods, and on chalky downs; a very rare and doubtful native of the Isle of Wight. *Fl.* March, April. *Fr.* October, November? ½.

A few trees on the slope of the down above Nunwell, possibly planted.

A large tree, of no great height but often of vast circumference, and of very slow growth, the branches long, spreading, and often drooping at their extremities, ascending or suberect. *Leaves* numerous, scattered, distichous, spreading in opposite directions, narrowly linear-elliptical, quite glabrous, about 8—10 lines in length and 1 line in breadth, thick and fleshy, dark green, shining and somewhat convex above, paler and flat beneath, the margins slightly thickened, each surface with a prominent midrib ending in a small, weak, brown point at the apex, and produced with the base of the leaf into a very short subcompressed footstalk. *Staminate flowers* in solitary, axillary, drooping, subglobose, nearly sessile clusters. *Anthers* numerous, forming a spherical head on a short stalk or column formed by their united *filaments*, yellowish, peltate, 5-, 6-, or 8?-lobed and as many celled; *pollen* very copious, yellowish white.

I introduce this species, but with considerable doubt, because it is one so prevalent and truly indigenous on all the chalky downs of Sussex, Hampshire and Wilts, though wanting on those of this island, except in the above single locality,

* [In the author's MS. this subclass had received no designation. As corresponding or rather contrasting with the name of this first subclass (see page 1), we have ventured on supplying that in the text above, as probably that which he had intended.—*Edrs.*]

and there but very sparingly and of somewhat stunted growth. The Yew is one of the very few natural ornaments of our South downs, over the bare sides and summits of which it is scattered abundantly as single trees, frequently of great size and evident antiquity, sometimes in groups, more rarely forming groves in the bottoms or valleys between these rounded hills, or in the steep woods which clothe their sheltered slopes.*

* One of the most remarkable of these Yew groves is that at Kingley Bottom, near Chichester, much resorted to in summer by the inhabitants of that city.

Juniperis communis, L. — I found, March 20th, 1845, a solitary dwarf bush of the common Juniper on the slope of the down above Nunwell, where it, as well as the Yew it accompanies, may possibly be native, but till detected in greater abundance I do not feel justified in introducing it amongst our indigenous vegetables on the strength of a single specimen.

CLASS II.

MONOCOTYLEDONOUS OR ENDOGENOUS PLANTS.

Cellular and vascular. *Stem* (when perennial) not increasing by a succession of annular layers on the outside of the old ones, usually with no distinction of bark, wood, pith or medullary rays, but consisting of cellular tissue, in which the vascular is inserted in confused bundles, or in a single ring, the newest formation being internal. *Leaves* mostly alternate below, often sheathing, permanent and withering on the stem, more rarely jointed and deciduous, with usually parallel nerves connected by simple transverse veins, rarely nettle-veined. *Flowers* with a single *perianth* (or without one), the parts mostly arranged in a ternary manner, sometimes when in a double row the external one green and resembling a calyx. *Embryo* with one *cotyledon*, or if apparently two they are alternate. *Plumule* and radicle either within the cotyledon, or lodged in a cleft in its side, or attached to its flat face.

Subclass I. FLORIDÆ.

Flowers never glumaceous, sometimes naked or nearly so (as in Araceæ, Pistiaceæ, Naiadaceæ and Juncaginaceæ), generally with a more or less coloured perianth, the pieces of which are in a single or double whorl.

Order LXXII. ORCHIDACEÆ.

"*Perianth* of 6 segments in 2 rows, mostly coloured; one, the lowest (so situated from the twisting of the ovary), usually differing in form from the rest and often spurred. *Stamens* 3, united with the style in a central column, the two lateral ones usually abortive, sometimes the central one (in *Cypripedium*). *Anther* often deciduous, 2—4—8 celled. *Pollen* powdery or frequently cohering in waxy masses. *Ovary* 1-celled, with 3 parietal receptacles. *Style* forming part of the column with the *stamens*. *Stigma* a viscid space in front of the column. *Capsule* (rarely a berry) 3-valved. *Seeds* numerous; *testa* loose, reticulated. *Albumen* 0."—*Br. Fl.*

Order LXXII b. HYDROCHARIDACEÆ.

Hydrocharis Morsus-Ranæ, L. (common Frog-bit), is not indigenous to the Isle of Wight, but is abundantly naturalized in the pool on Barrett's common, two miles and a half from Ryde.

Tribe I. *OPHYRDINEÆ*.

Anther 1, adnate to the face of the stigma. Pollen-masses granular: pollen cohering in an indefinite number of finally waxy granules or lobes, attached by an irregular elastic cellular tissue along the axis of the pollen-mass.

I. ORCHIS, Linn. Orchis.

"Lip spurred. Glands of the stalks of the pollen-masses contained in a common little pouch."—Br. Fl.

† "Glands of the pollen-masses separate," "bracts 1-nerved, tubers undivided."—Bab. Man.

1. O. Morio, L. Green-winged Meadow Orchis. "Lip 3-lobed somewhat crenate, the middle lobe emarginate, sepals obtuse ascending connivent, spur ascending blunt rather shorter than the germen."—Br. Fl. p. 420. E. B. t. 2059.

In dry or rather moist meadows and pastures; abundantly. Fl. April—June.

24.

E. Med.—Fields at Quarr abbey, and elsewhere about Ryde. Plentiful on Wootton common, and in fields adjoining. Meadows about Rookley farm, 1845.

W. Med.—Abundant about Cowes, Yarmouth, Newport, and most other parts of the island.

Root of 2 solid nearly globose tubers, often with a short point, and having a few short stout fibres above them. Stem usually about 6, 8 or 10 inches high, sometimes a foot or even 18 inches, erect, hollow, rounded, angular and purplish above. Leaves much shorter than the stem, lanceolate or linear-lanceolate, pale green, smooth and somewhat shining, but without spots, many-ribbed, paler with a glaucous or silvery aspect beneath, slightly pointed and mucronate, the lowermost spreading and mostly recurved or twisted and flattish, those next above them more or less erect and folded, the highest of all acute, spathaceous, clothing the stem to within a short distance of the flower-spike. Bracts lanceolate, membranous, coloured, about as long as the germen and incumbent on it, 3—5 nerved, the nerves greenish, the lateral ones often obscure. Flowers resembling those of O. mascula, but scentless, and fewer in comparison with that and other species of the genus, commonly from 8 or 10 to 15 or 20, in an oblong-obtuse, lax or occasionally crowded or compact spike, about 2—4 inches in length, varying in hue from deepest purple to flesh-colour or (rarely) white, the darker shades exhibiting a fine velvety lustre. Sepals coloured, porrected or ascending, connivent and converging like a hood or helmet (hence the Latin name of the species) over the column and very small lateral petals, which they almost wholly conceal; the lateral ones elliptical-oblong, very obtuse or rounded, oblique at the base, concave, strongly ribbed or striated with purplish green lines, the superior sepal oblong, plane and striate like the others. Lateral petals very small, sublinear-obtuse, striated like the sepals; lip large, pale and spotted with purple in the centre, the two lateral lobes approaching to semiorbicular, deeply and irregularly notched or crenate, veined with purple, strongly deflexed; middle lobe shallow, much smaller and equal to or shorter than the lateral pair, emarginate, with a broad shallow sinus, the segments crenate; spur ascending, shorter than the germen, very obtuse, compressed and dilated horizontally, not cloven at the end, its orifice nearly glabrous. Pollen-masses greenish yellow, 2-lobed, of many large grains cohering together on a golden yellow elastic stalk or pedicel, capable of being drawn out to a great length.

In a meadow between Pigslegs and Smallbrook-beath copses I noticed, May, 1845, the following variations in the colour of the flowers:—1. Flowers delicate pink verging on flesh-red. 2. Lip white, destitute of spots; sepals and superior petals violet without, greenish white within. 3. Flowers violet; disk of lip whitish, shading off into violet at the margin, its centre thickly dotted.

This species, which is very common in England, though quite unknown in Scotland, is certainly one of the most beautiful of the British Orchises, whether we consider the lustre of its deep purple blossoms, emulating the richest velvet, or the diversity of shades and variegated colours they assume.

2. *O. mascula*, L. *Early Purple Orchis*. Vect. *Kettle-cases*. "Lip 3-lobed somewhat crenate, the middle lobe emarginate, outer sepals acute, the two lateral ones reflexed upwards, lateral inner sepals converging, spur obtuse rather longer than the germen." — *Br. Fl.* p. 420. *E. B.* t. 631. *Curt. Fl. Lond.* i. fasc. 2, t. 62.

β. Flowers pure white.

Very abundant in moist woods, groves, meadows, pastures, and damp, shady, grassy places in general. *Fl.* April—June. 2f.

β. A single specimen found at St. John's, 1846. Near Appuldurcombe. Near Ryde, *Miss Lucas*, 1839! Near Westridge, many specimens, *R. Hudson, Esq.*!

Plant quite glabrous. *Root* of 2 unequal, roundish oblong, fleshy tubers, crowned with several long, thick, cylindrical fibres. *Stem* erect, from about 12 to 15 or 18 inches high, rounded, with many obsolete angles and furrowed above, solid, brittle, clothed for a great part of its length upwards with the close sheath-like superior leaves, mostly purplish towards the top. *Leaves* numerous, closely sheathing, those at the base of the stem crowded and prostrate or decumbent, spreading on the ground in a circular form when growing, but becoming, like the upper stem-leaves, erect after gathering, sometimes nearly a foot long and $1\frac{1}{2}$ inch wide, bright green, fleshy, oblong-lanceolate, often somewhat falcate, shorter than the flower-spike, obtuse or slightly pointed, with a minute often brown callous tip, very smooth and shining, moderately folded, with a sharp keel and several parallel nerve-like ribs; mostly with us elegantly spotted and blotched with purplish black, sometimes quite plain; uppermost leaves inflated and spathaceous, broader, paler and more acute, scarcely spotted. At the very base of the stem are situated a pair or two of opposite, unequal, broadly ovate, membranous, many-ribbed, closely appressed sheaths. *Bracts* coloured, membranous, lanceolate, single-ribbed, sheathing and rather shorter than the germen, twisted at the tips. *Flowers* numerous, showy, in a loose, terminal, oblong-obtuse spike, of from 3 to 6 or 8 inches in length, varying from bright pinkish purple to flesh-colour or even white, the base of the lip and fauces pale, with a few purple spots and finely downy. *Sepals* ovate or ovato-lanceolate, coloured, acute or sometimes even acuminate, the inferior one incumbent on the lateral petals, 3-nerved, the 2 lateral strongly reflexed, nearly erect and diverging at their points, 4- or 5-nerved. *Lip* very large, rather broader than long, roundish in circumscription, minutely glanduloso-pubescent above, the inferior margin trifid, the sinuses obtuse, central lobe emarginate, the segments rounded at the exterior angle and somewhat curved outward, the two lateral lobes rather shorter than the middle one, at length strongly deflexed, all minutely and unequally crenate and waved along their edges, entire only at their bases; *lateral petals* erect, connivent and overlapping at the tips, hollow, ovate and obliquely inserted; *spur* ascending, subcylindrical, very obtuse, more or less enlarged and flattened at the extremity, bluntly keeled along its under side. *Anther-cells* parallel, approximate, purplish; *pollen-masses* blackish or greenish, 2-lobed. *Germen* coloured, twisted, sheathed at base by the bracts.

The long spikes of purple blossoms and fine spotted leaves of this Orchis are a great ornament to our moist pastures in the spring and early summer months.

The flowers, though sometimes devoid of scent, more usually possess a rather

powerful and not unpleasant smell, hardly to be called fragrant, and even disliked by some persons. The roots or tubers, under the name of Salep, were formerly much in demand as an article of diet, and, though, like the Sweet Flag, the spontaneous growth of our own country, continued to be imported from abroad, till the more general introduction of other farinaceous preparations, as sago, tapioca and arrow-root, nearly superseded its use. The leaves appear to be more frequently unspotted on the Continent than with us.

For an interesting paper on the nature of Salep, by Dr. Lindley, see Trans. of Linn. Society, xviii. p. 423.

3. *O. ustulata*, L. *Dwarf Dark-winged Orchis*. "Lip 3-partite marked with discoloured raised spots, segments narrow, the middle one bifid, outer sepals connivent acute including the two lateral inner ones, spur nearly half as long, and bracteas as long, as the germen."—*Br. Fl.* p. 420. *E. B.* t. 18.

On dry, hilly, open pastures and downs; not unfrequent. *Fl.* May, June. 24.

E. Med.—Tolerably abundant on St. Boniface down, between Ventnor and the Pulpit Rock, and in chalky meadows at Bonchurch, occasionally. Steephill, *Albert Hambrough, Esq.*!

W. Med.—Freshwater, near the cliffs, *D. Turner, Esq.*, B. T. W.!!! Plentiful on the sloping sides of the valley by Calbourne New Barn, *Lady Simeon*, 1840!!!

A charming little plant, with flower-spikes that look as if singed or scorched at the summit, from the rich brownish purple of the yet unexpanded buds and calyces of those fully blown, contrasted with the milk-white deeply 3-cleft lip of the corolla, elegantly sprinkled with dark crimson dots. *Root* of 2 oblong whitish tubers, with a few stout fibres at the crown. *Stem* erect, 3—5 inches high, angular. *Leaves* several, various in width, lanceolate, the lowermost spreading, the rest nearly erect, palish green, a little glaucous, many-ribbed. *Bracts* variable in length, never in my numerous specimens quite equal to, and often very considerably shorter than, the spirally twisted germen. *Flowers* in a short, dense, oblong-obtuse, cylindrical spike, about an inch long. *Sepals* ovate, converging, dark purple, paler after expansion. *Lateral petals* very small and narrow, spatulate, concealed by the calyx; *lip* 3-lobed, speckled with a few dark purple spots, the two lateral lobes oblong-obtuse, the middle one much the largest, wedge-shaped, deeply cleft, the lobes obtuse, more or less notched on their edge and spreading; *spur* obtuse, short, conical and curved.

The Rev. G. E. Smith has remarked to me that this plant possesses the delicate fragrance of *Heliotrope*. It has not been found in either Scotland or Ireland.

†† "Glands of the pollen-masses separate," "bracts with 3 or more nerves, tubers undivided."—*Bab. Man.*

4. *O. maculata*, L. *Spotted Palmate Orchis*. Spike pyramidal acute, bracteas somewhat shorter than the flowers, lip with its central lobe as long as the lateral ones which are notched at the margin, spur slender pointed. *Br. Fl.* p. 422. *E. B.* t. 632.

β. Flowers blood-red.

In woods, thickets, groves, meadows and pastures, also on dry heaths and in moist or boggy places; an abundant species. *Fl.* June, July. 24.

β. "A variety with blood-red flowers was found in this island by the Rev. — Price, of Lyminge, and is now growing in his garden," *Rev. G. E. Smith* in litt.

Root of 2 compressed, whitish, fleshy, palmate tubers, surmounted by several long, cylindrical, downy fibres. *Stem* erect, from 6, 8, or 10 inches to 2 feet high, rounded, nearly terete below, acutely ridged, grooved and angled above, filled with a very loose cellular tissue or subfistulose. *Leaves* sheathing, distant, alter-

nate, bright grass-green above, and generally but not invariably covered with spots or blotches of purplish black, pale silvery or grayish green beneath, with several filiform parallel ribs, the two lowermost ribs approximate, unequal in size and more or less spreading, oblong, obovato-oblong or obovato-elliptical, very rounded and obtuse or slightly pointed, upper leaves elongato-lanceolate. *Bracts* one under each flower, linear-lanceolate, acuminate, their margins finely cartilaginous-serrulate, 3-nerved, the 2 lateral nerves obscure, lower bracts much longer than the germen, those higher up about equal to the latter or even shorter. *Flowers* in a dense, oblong-conical, obtuse, cylindrical and terminal spike, from 1 or 2 to 6 or 7 inches long, varying from palish purple or rose-colour to nearly pure white. *Sepals* oblong or oblong-lanceolate, patent, faintly 3-nerved, the 2 lateral sepals oblique and ascending, mostly hooded at their apex. *Two upper petals* ovate, obtuse, connivent, and forming a hood over the anther; *lower petal* (lip) obcordato-rotundate, 3-lobed, flat or with the lateral lobes deflexed even on the same plant, the disk and base streaked and spotted with purple in various ways, in the white variety very faintly marked or immaculate; two outer lobes mostly rounded, crenate and erose, at other times acute and diverging, with a very deep sinus between them and the centre lobe, which is commonly much smaller, oblong or ovate, obtuse or slightly pointed, and considerably longer than the rest, sometimes however only equal to the lateral lobes, or even shorter and truncate.

This and the following species bear a strong resemblance to each other, and the specific characters, as usually laid down, are not sufficiently discriminative. The bracteas of *O. maculata* are commonly stated to be shorter than the germen, but I find, as Dr. Johnston has also remarked (Fl. of Berwick-upon-Tweed), that they are as often quite equal to the latter and even exceed them in length, though not so much produced as in *O. latifolia*. The flower-spikes in *O. maculata* are more tapering or pyramidal than those of *O. latifolia*, in which they are rather cylindrical and obtuse. The lower lip in the first of these species has the middle lobe equal to the two somewhat crenate lateral ones, not produced beyond them; in *O. latifolia* the central lobe visibly exceeds the lateral ones, which last are very entire and rounded in their outline. The spur in *O. maculata* is far more slender, and tapers off almost to a point, not terminating very abruptly as in *O. latifolia*.

5. *O. latifolia*, L. *Marsh Palmate Orchis*. Spike cylindrical obtuse, bracteas rather longer than the flowers, lip 3-lobed, central lobe produced beyond the two lateral ones which are rounded and nearly entire, spur subcylindrical bluntish shorter than the germen. *Br. Fl.* p. 421. *E. B. t.* 2308.

β. angustifolia. See Bab. Manual.

In low, moist, marshy or boggy places, woods, meadows and pastures; pretty frequent, though much less common than the foregoing. *Fl.* May—July. 24.

E. Med.—Sandown marshes; near Shanklin and Appuldurcombe. Wet meadows about Newchurch. [Marshy field at the top of Brading harbour, *A. G. More, Esq.*, Edrs.]

W. Med.—Common in meadows about Thorley. Boggy ground below Calbourne mill. Abundant in Easton marsh, and in boggy meadows at Freshwater gate. Common in the great plantation of fir, beech, &c., at Westover.

β. Boggy ground by the Wilderness, 1844.

A handsome species, with a dense spike of purple or sometimes nearly white flowers. *Root* of 2 irregularly palmate tubers, with several long thick fibres. *Stem* erect, hollow, somewhat angular, 1—2 feet high, leafy, green or purplish. *Leaves* closely sheathing, ovato-lanceolate, sometimes very large and broad, plain or more rarely spotted with black, upper ones narrow like the bracteas. *Spike* dense, many-flowered, cylindrical, abrupt, 4 or 5 inches long. *Bracteas* longer than the flowers, the lowermost much more so than the rest, purplish, single-ribbed. *Flowers* various shades of rose-red, crimson or purple, more rarely white. *Sepals* coloured, the two outer ascending and spreading, the middle one incumbent on the 2 connivent lateral petals that enclose the anther; all equal, ovate, blunt

and single-ribbed. *Lip* spotted, nearly plane, in 3 very unequal lobes, the lateral broad, rounded, entire or slightly notched, spreading or deflexed, the middle one small, rather longer than the rest, somewhat triangular; *spur* subcylindrical or conical, compressed, deflexed, bluntish, always shorter than the furrowed much-twisted germen. *Pollen-masses* greenish.

[††† "Glands of the pollen-masses united."—Bab. Man.]

6. *O. pyramidalis*, L. *Pyramidal Orchis*. "Lip with 3 equal entire lobes and 2 protuberances at the base above, lobes oblongo-truncate, middle lobe sometimes emarginate, outer sepals spreading acuminate, spur subulato-filiform longer than the germen, bractees 3-nerved."—*Br. Fl.* p. 422. *E. B.* t. 110. *Jacq. Fl. Aust.* iii. 37, t. 266. *Anacamptis*, *Rich.*

In dry or rather moist clayey or chalky meadows and pastures, in woods and on the high downs; by no means rare. *Fl.* June, July. 24.

E. Med.—Not common about Ryde. In Binstead stone-pits, and in the fields by the foot-road from that village to Ryde, sparingly. Common on grassy slopes at Ventnor. Bembridge down.

W. Med.—Plentiful in grass-fields at Egypt, and on the slipped land along the shore W. of Cowes. Abundant on the down W. of Freshwater gate. Near Compton farm, and near Yarmouth. Abundant on Carisbrooke-castle hill. In the fir-plantation by Calbourne New Barn. In the great fir- and beech-plantation by Westover.

II. GYMNADENIA, R. Br. *Gymnadenia*.

"Lip spurred. *Anther-cells* contiguous. *Glands* of the stalks of the *pollen-masses* naked, approximated."—*Br. Fl.*

1. *G. conopsea*, R. Br. *Fragrant Gymnadenia*. *Br. Fl.* p. 423. *Orchis*, L.: *E. B.* t. 10.

In dry, hilly, heathy or chalky pastures, sometimes in wet boggy situations; not very general. *Fl.* June—August. 24.

E. Med.—Bank opposite Madeira villa, Ventnor, *Miss Hadfields*!!

W. Med.—Very fine and plentiful on the slipped clay-banks in Colwell bay, and on the upper end of Colwell heath, in very wet ground. On Freshwater down, common, 1841. On chalky slopes at Apes down, 1846.

Root of 2 palmate, whitish, fleshy tubers, and a few simple, abrupt, tapering fibres. *Stem* erect, from about 12 to 18 or 20 inches high, leafy, rounded below, angular, furrowed and mostly purplish above, smooth and glabrous, with a central hollow or wholly filled with loose cellular tissue. *Leaves* rather numerous, pale green, not spotted, closely sheathing, glabrous, the lower ones more or less spreading but not prostrate or drooping at the ends as in *O. mascula*, &c., somewhat obtuse, the upper erect or erecto-patent, acute, all strongly folded together or conduplicate, often slightly recurved or subfalcate, extremely variable in breadth, mostly very narrow, linear and linear-lanceolate, at other times as broad as in *O. pyramidalis* and lanceolate or elliptic-lanceolate, the uppermost of all gradually approaching the floral bracts in size and shape. *Flowers* numerous, much resembling those of *O. pyramidalis* in size and structure, but of a paler more dilute colour, which is rather lilac than purple or crimson, rarely white, in a terminal spike of an oblong or pyramidal figure, more seldom subcylindrical

O. laxiflora, Lam. (*O. ensifolia*, Vill.), abundant in the Channel Islands, is reported, as I learn from my friend Mr. Borrer, to have been found in this island, on the authority, I believe, of Mr. Dawson Turner.

and obtuse, from 2 to 4 or 5 inches in length, much crowded or dense (Graves and Hooker, Fl. Lond. iv.), at other times lax or with comparatively few and distant flowers (E. B. i. t. 10). *Bracts* lanceolate, taper-pointed, green (scarcely coloured), about as long as the germen, bluntly keeled. *Sepals* ovato-oblong, very obtuse, obscurely 3- (or 5?) nerved, their margins reflexed, the *superior* one nearly erect, about as long as the petals, the two *inferior* or lateral deflexed and spreading. *Petals* coloured uniformly like the sepals, without spots or markings of any kind, the two *superior* broad, concave and connivent over the anther, shorter than the lateral sepals, of an irregularly rounded form, their margins entire or slightly crenate only; *lip* roundish, broader than long, nearly plane, somewhat plicate, in 3 rather shallow rounded lobes of equal length, the middle one of which is quite entire, the two lateral variously notched along their anterior margin; *spur* very slender, filiform, subulate, twice as long as the germen or even more, nearly cylindrical, without a keel, scarcely pointed, curved inwards for the most part or nearly straight. *Column* very short, forming a hood over the anther, the cells of which are parallel, perforated at the base (not saccate). *Pollen-masses* pear-shaped, yellowish or greenish, composed of rather few large angular grains, stalks golden yellow, their glands pellucid, flat and narrow-oblong, naked (not included in a sac or pouch) and approximate, closing the bottom of the cells. *Germen* purplish, oblong, twisted, suddenly contracted and bending forward at the summit. *Stigma* concave, with a short rounded lobe on each side, forming its anterior margin, between which and the anther-cells is a pair of shining pellucid glands (two abortive anthers?).

In general appearance this species resembles *Orchis latifolia* and *O. maculata*, but the delicate fragrance of its blossoms, like that of the Clove Pink, will at once distinguish it. Mr. G. E. Smith, who first noticed it in Colwell bay, observes that the plants there have a mixed odour of the Hyacinth with that more peculiar to their kind. The plant at Colwell is very large, the spikes very dense, and I think comes later into flower than that at Ventnor, of which the few living specimens I have as yet seen have extremely narrow leaves and lax spikes of flowers, approaching nearer in this respect to the figure in E. Botany. Perhaps the former may be *G. densiflora* of Dietrich, Fl. March. p. 164, as it agrees with my dried specimens, and in the later period of flowering, viz., July and August.

III. HABENARIA, R. Br. *Habenaria*.

"*Lip* spurred. *Anther-cells* separated, diverging at the base. *Glands* of the stalks of the *pollen-masses* naked, distant." — *Br. Fl.*

1. *H. viridis*, R. Br. *Green Habenaria*. *Frog Orchis*. "*Spur* very short 2-lobed, *lip* linear bifid with an intermediate tooth, *anther-cells* without any process between their bases, *bracteas* much longer the flowers, *tubers* palmate." — *Br. Fl.* p. 423. *Satyrion*, L.: E. B. t. 94.

In damp meadows and pastures, as well as in dry hilly and stony or gravelly places; very rare with us. *Fl.* June, July. 2f.

W. Med.—In a field at the end of the fir-plantation by Long lane, near Newport, R. Godman Kirkpatrick, Esq., June, 1841! The only specimen (a very fine one) found by Mr. Kirkpatrick was kindly presented to me by his sister, Miss Elizabeth Kirkpatrick, a few days after it was gathered. I have also received, through the kindness of the Rev. James Penfold, a second specimen, gathered in June of the same year, by Miss Woodroffe, near the "high summerhouse" at Swainston.

2. *H. chlorantha*, Bab. *Great Butterfly Orchis*. *Spur* twice as long as the germen, *lip* linear entire, upper calyx-sepals and

lateral petals connivent, cells of the anther very distant at the base converging at their summits. *Br. Fl.* p. 424. *Bab. Linn. Trans.* xvii. p. 462. *Orchis bifolia* (sed non Linn. secund. Babington). *E. B. i. t.* 22. *Platanthera chlorantha*, *Fl. Dan. fasc.* xl. t. 20362 (opt.)

β. Flowers regular, without a spur.

In thickets, groves, moist open places in woods, and on grassy slopes; very frequent. *Fl.* May, June. 24.

E. Med.—Common about St. John's, in woods near Sea grove, in Quarr copse, and elsewhere around Ryde. Abundant in the grounds at Norris castle. Plentiful in woods at the Priory, 1846. Woods and pastures about Combley, Duxmore, and all that vicinity, frequent, 1844. Wood at the mouth of the Wootton river on the West side, plentifully, 1845. Wood (Combley Great Wood?) near Newchurch, 1844.

W. Med.—Common in woods about Calbourne, Thorley, Swainston, &c. In the grounds of Mrs. Goodwin at W. Cowes.

β. Grounds at Norris castle, very rare, 1838.

Root of 2 fleshy, oblong, pointed tubers, with several short, stout, downy fibres immediately above them. *Radical leaves* mostly 2, sometimes 3, rarely 4, shorter than the stem, elliptical or elliptical-lanceolate, sometimes inclining to obovate, attenuated below, nearly erect, many-ribbed, quite glabrous, and mostly shining as if varnished, bright green above, paler and whitish beneath, scarcely pointed; those on the stem bractiform, lanceolate, distant. *Stem* erect, from about 10 to 15 or 20 inches in height, glabrous, pale green, solid, rounded, with several slender, acute, angle-like ridges. *Flowers* in a lax, oblong, obtuse, cylindrical spike from about 4 to 6 or 8 inches in length, rather large, white, and delicately though powerfully fragrant, especially in the evening, the scent like that of the *Tuberose* (*Polianthes tuberosa*), or by others compared to orange-flowers. *Floral bracts* longer than the ovary, lanceolate, erect. *Sepals* white, the 2 lateral spreading, nearly semioval and subcordate at the base, somewhat acuminate, scarcely acute, often rounded at the tips, very obscurely nerved, waved or mostly deflexed at the points; *superior sepal* broadly cordate, obtuse, very faintly 5-nerved, undulate, nearly erect, covering the *superior petals*, which are very small, sublinear, greenish, erect and connivent, rather shorter than the sepal; *lip* ligulate, about as long as the ovary, the apex rounded, more or less recurved, greenish. *Column* (of the anther) as long as the cells, greenish, truncate, concave in front, with a thick prominent ridge or crust in the centre, that has a corresponding groove behind it; *anther-cells* very widely diverging downwards; *pollen-masses* buff-coloured, their glands a thin circular disk. *Stigma* very broad, its nectariferous concavity nearly semicircular or half-basin-shaped, its superior margin rising into a green tubercular prominence in the middle, its anterior and lateral margins produced on each side into a rounded obtuse process bearing the base of the anther-cells: the base of the stigma is perforated by a circular opening into the hollow *spur*, which is slender, subclavate, compressed and almost pointed, more or less incurved, about twice the length of the ovary, its upper part whitish, lower greenish and filled with a saccharine fluid. *Ovary* green, slender, twisted, scarcely above half as long as the spur. *Capsule* elliptic-oblong, erect, $\frac{3}{4}$ ths of an inch in length.

This, which is far more common with us than the following species, is known from it by its generally greater height; much larger and broader flowers, of a pure white; thicker, more compressed and somewhat club-shaped spur; and especially by the greater divergence of the cells of the anther, whose bases are so far apart that, were the apex of each cell produced till they met, a nearly equilateral triangle would be described by their union. The glands of the pollen-masses are not fixed to the bottom of the cells in this species, but protrude at their lower extremities, and, presenting a flat, circular and glutinous disk, are easily detached from the anther on coming in contact with adjoining parts of the flower, to which

they adhere, dragging the pollen-masses quite out of their cells, and this happens even in the yet unexpanded flowers.

β. is very remarkable, as having flowers in five nearly equal divisions, quite scentless and tinged with green, the lateral petals not connivent but spreading, lower lip broad, plane, and the spur entirely wanting. Of this monstrosity I had previously seen a dried specimen, in the possession of Miss G. Kilderbee, from the same station, and was at a loss what species to consider it. Mr. Stock, of Bungay, has remarked a similar alteration of structure in the flowers of *Orchis pyramidalis*.

3. *H. bifolia*, Bab. *Lesser Butterfly Orchis*. "Inner sepals connivent obtuse, spur twice as long as the germen, lip linear entire obtuse, anther oblong-truncate, its cells parallel."—*Br. Fl.* 423. *Bab. Linn. Trans.* xvii. p. 463, and *E. B. Suppl.* t. 2806. *Curt. Br. Entom.* v. t. et fol. 233 (opt.) *Fl. Dan.* fasc. xl. t. 20360 and 20361. *Plat. solstitialis*, *Drejer*.

In barren woods, thickets and open heathy places, on a damp, meagre, stiff soil; not common, and I think probably only a more contracted form of the plant last described. *Fl.* May? June. 2.

E. Med.—In Stroud wood, by Aldermoor, near Ryde, not scarce, 1838.

W. Med.—Colwell heath, 1841, two specimens.

The difference between the present and preceding species has been ably illustrated by Mr. Babington in the works above quoted. The great characteristic of the plant now described is the parallelism of the anther-cells, more closely approximated at their base than those of *H. chlorantha* are at the summit of theirs; hence the flowers of our present species are much narrower than the blossoms of *H. chlorantha*, and far less handsome and conspicuous. The anther is shorter, the petals narrower; the two lateral connivent ones, with the lip, spur and summit of the anther are of a greenish or herbaceous colour, scarcely observable in the almost pure white flowers of *H. chlorantha*; the spur is more slender, hardly thicker than packthread, cylindrical, scarcely clavate, and hardly at all compressed as in *H. chlorantha*, much more horizontally porrected and straighter, whereas in that species it is constantly strongly bent downwards and curved outwards, besides being visibly enlarged and clavate towards the extremity and much flattened. The lateral calyx-segments are simply spreading, and rather curved forwards or slightly connivent than reflexed, which is their general tendency in *H. chlorantha*, and every part of the present plant is smaller. The scent of both is highly and delicately fragrant, particularly towards evening and at night.*

The plates of *Platanthera solstitialis* of *Drejer*, *Fl. Dan.* xl. t. 20360 and 20361, appear to favour the opinion of the learned Sir William Hooker, that both are extreme forms of the same plant, as those figures represent a plant having as much at least of the habit of *H. chlorantha* as of *H. bifolia*.

I suspect *H. bifolia* is the sole, or at least the prevailing, species in the N. of Europe, and that our *H. chlorantha* is the more frequent in the central or southern parts. It is to be regretted that the confusion in which these two plants have been involved should have settled the trivial name *chlorantha* (greenish yellow flower) upon the one least deserving of that appellation. The concluding remarks of Sir James Smith on *Orchis bifolia*, in his 'English Flora,' evince the very little attention he paid to our present plant even as a variety, though distinctly noticed by so many of the older botanists. The figure in *Br. Entom.* admirably represents the parallelism of the anther-cells.

* The smell of the flowers of *H. chlorantha* is by some persons compared to that of scented soap.

IV. OPHRYS, Linn.

"Lip without a spur. Glands of the stalks of the pollen-masses each in a distinct little pouch."—Br. Fl.

1. *O. apifera*, Huds. *Bee Orchis*. Vect. *Bee Flower*. "Lip tumid trifid, the intermediate lobe recurved at the margin emarginate with a long subulate reflexed appendage in the notch rather elongated with a hooked point, inner sepals oblong bluntish downy."—Br. Fl. p. 425. *E. B. t.* 383. *O. insectifera* L., L.

In dry meadows, pastures, woods and thickets, on chalky banks, downs, and on wet slipped clay-land; far from uncommon; in some years even plentiful, in others comparatively of rare occurrence. *Fl.* June, July. *Fr.* August. 24.

E. Med.—In Quarr copse, occasionally, chiefly in the old stone-workings or pits now covered with grass or brushwood. Binstead stone-pits, and in the rough pasture-fields between the village and Miss Player's lodge, along the footway from Ryde. Common about Ryde, in various places, in 1839, as in the field in which Quarr abbey stands, and between it and Ninham. Field opposite Lord Spencer's, Ryde, 1841, and in Pelham fields. Abundant in the Undercliff and other parts of the island in 1843. At the Orchard, Old Park, between Niton and Blackgang, 1841. Abundantly on Kennerley heath, in sandy loam, growing amongst the furze and very fine, 1843. Above White-cliff bay, between the preventive-station and Culver cliff, *Admiral Brenton!!!* Very common on the landslip at Bonchurch, and on St. Boniface down, *S. Hailstone, jun., Esq.* In the meadow at St. Boniface, *Mr. W. D. Snooke*. Brading down, *Mr. Lawrence*. About Norris castle, *Miss G. Kilderbee*. Steephill, *Pulteney*.

W. Med.—Pastures at Egypt, by W. Cowes, the seat of Sir Thos. Tancred, Bart. In a wood near Yarmouth. Foot of the down near Freshwater, *Mrs. Rushworth*, *B. T. W.*, and the *Rev. G. E. Smith*, who tells me it is particularly fine there. Northwood park, Gurnet bay, *Miss G. Kilderbee*. Calbourne Bottom, *Mr. Massey*. Carisbrooke, *Pulteney*.

A specimen with the flowers white, the lip only being greenish, was found by *Mrs. Martin* at Ventnor.

Root of 2 roundish or ovate tubers, with several stout white fibres at the crown. *Stem* from 8 or 10 to 18 inches or even 2 feet in height, rounded, smooth, solid. *Leaves* alternate, sheathing, slightly glaucous and often shining, ovato-lanceolate, the upper ones erect, the lowermost spreading. *Spike* of several large, distant, erect or often resupinate flowers. *Sepals* 3, broadly ovate, concave, obtuse, spreading and glabrous, of a beautiful peach-blossom colour, with 3 green ribs, of which the middle one is broadest and most conspicuous, sometimes nearly colourless, at other times a rich maroon or purple. The two *lateral petals* small, narrowly oblong and obtuse, greenish and hairy, erecto-patent, with strongly reflexed edges dilated or auricled at the base; *lip* large, with a broad, convex, smooth disk, in 5 unequal, marginal, deflexed lobes, the two uppermost triangular, pointed, the intermediate pair more rounded and greenish, the lowest and central lobe produced into a greenish, recurved, ligulate and pointed appendage; the central and upper lobes are densely pilose, the intermediate ones nearly as smooth as the disk, which is of a rich, purple, velvety brown, streaked and spotted with greenish yellow in a manner difficult to convey an idea of by words, and liable to considerable variation in pattern: the colour of the lip is also liable to great variation even in the same plant, often diluted, as it always is on fading away, to a dull reddish or livid fawn-colour, like that of *O. aranifera*, the sepals remaining deeply tinged, whilst the flowers, whose sepals are pale, retain the usual rich hue of the lip unaltered. *Column* linear, greenish, its summit vaulted, with a twice-curved pointed prolongation of itself beyond the pollen-masses, the stems of which lie loosely in 2 somewhat distant membranous grooves, ending in the very distinct pair of globular sacs or pouches that receive the flattened transparent glands of the stalks. *Stigma* a

broad, glandular, flattish, nectariferous disk. *Pollen-masses* clavate, of many cohering triangular granules, their broad ends outermost or at the circumference, by which, when ripe, they are retained on the glutinous face of the stigma after they are thrown upon it by the falling out of the pollen-masses from their including cells. *Germen* green, oblong, with 6 very thick obtuse ribs, scarcely twisted. *Capsules* erect, membranaceous, 1 or $1\frac{1}{4}$ inch in length, elliptical-oblong, with 6 stout obtuse ribs or angles. *Seeds* pale reddish brown, very like fine sawdust.

2. *O. aranifera*, Huds. *Spider Orchis*. "Lip tumid clothed with short dense hairs entire or obscurely lobed, middle lobe large without an appendage or with a mere gland or point in the notch, inner sepals linear, anther acute."—*Br. Fl.* p. 425.

β . *fucifera*. "Lip undivided with a spreading wavy margin, inner sepals scabrous."—*Br. Fl.* p. 425. *O. fucifera*, Sm.: *E. B. S.* t. 2649.

On clayey or chalky pastures, grassy banks and sloping sides of the downs, in stony woods and thickets, but apparently very uncommon in this island. *Fl.* March—May. 24.

E. Med.—On a sloping bank on the left-hand side of the Cowleaze (going from Bonchurch) just below the Madeira villas, *Mrs. Clarkson*, 1843 (two specimens). On a bank above the Cowleaze, between Ventnor and Bonchurch, on the left-hand side of the gate leading to Madeira vale (going from Ventnor), several specimens, *Miss Thompson*, May 6th, 1846!! (communicated by *Mrs. Martin*). Gathered on the same spot April 28th, 1848, about a dozen plants. Several specimens gathered in Luccombe landslip, by the side of the main path, May, 1843, by a servant of *Miss Roper*, of Ventnor!! On St. Boniface down, above St. Boniface cottage, several specimens, *Albert Hambrough, Esq.* Behind Upper Mount, Bonchurch, *Miss Dick* and — *Saxby, Esq.* I understand from *Dr. Martin*, who saw the fresh specimen from the former station, that it was referrible to the var. β . *fucifera*.

β . "The only form yet collected in Hants."*

Of more humble growth than *O. apifera*; about 4—6 inches in height. *Root*, as in *O. apifera*, of 2 whitish, ovoid or subglobose, sessile tubers, with a few short, stout, fleshy, cylindrical fibres immediately above the latter. *Stem* leafy, few- (2—6) flowered, erect, a little flexuose, subterete. *Leaves* as in *O. apifera*, but rather narrower (?) and of a somewhat brighter or less glaucous green, I think, than in that species, the lower spreading or strongly recurved, wavy and contorted; those higher up lanceolate, erect, concave, strongly sheathing and very acutely pointed, clothing the stem nearly to its summit. *Flowers* in size and appearance like those of *O. apifera*, but fewer and less remote, forming a sort of short terminal spike. *Sepals* pale green (not coloured as in *O. apifera*), oblong-obtuse, the margins deflexed or revolute, 3-nerved, the median nerve very conspicuous, the lateral sometimes nearly obsolete; the superior sepal narrower than the two lateral, all at length erect or a little bent backwards. *Superior* or lateral *petals* oblong or lingulate, rounded at the tips, crisped or wavy on the edges, much smaller and shorter than the sepals, and of a green tinged with purplish brown, diverging, erect; *lowermost petal* (lip) longer than the lateral sepals, oblongo- or obovato-rotundate, firm and fleshy, convex above from the deflexion of its sides, its anterior margin simply retuse or emarginate, without any appendage; concave, greenish and ribbed beneath, the deflexed portion copiously striate, with branching veins directed towards the entire or subcrenate edges of the lip; upper surface of the lip thickly clothed with jointed hairs, forming a broad velvet-like belt or field all around, of a rich purplish brown, fading at length to a paler or snuff-colour, and enclosing a large, perfectly glabrous, somewhat shining area, occupying the centre of the disk and marked with a pale spot, with whitish

* [Bromfield in 'Phytologist,' iii. p. 907. All the stations, therefore, given above must refer to this form, as well as the author's detailed description.—*Edrs.*]

edges, of a shape too irregular and variable, even on the same individual specimen, to admit of accurate description: this central area is bounded on each side posteriorly by a densely pilose ridge or prominence, which in some specimens is produced into a distinct fleshy lobe or auricle pointing forwards: on the anterior part of the lip the pile is very close and short, and its thin greenish edges are quite glabrous: in some of my specimens the lip is entire in front, or the notch is occupied by a small glandular prominence. *Column* green, porrected, a little downy, its vaulted summit attenuated into a straight, simple, horizontal or slightly deflexed but not hooked point, having no small resemblance to the head and bill of a goose or duck when viewed laterally; *anther-cells* parallel, open throughout in front; *pollinia* of many coarse, yellow, cohering, angular masses, of very unequal size, their stalks bright yellow, with flattish, diaphanous, slightly cupped glands.

The hairy lip, from its colour, form and markings, bears a striking likeness to the abdomen of a largish spider, particularly when faded to the lighter shade it finally assumes before commencing to wither. The column, too, with the diverging upper petals, may, with but little assistance from the imagination, be shaped into a bird brooding, with expanded wings, over its nest, as in the act of feeding its young.

3. *O. muscifera*, Huds. *Fly Orchis*. "Lip oblong trifold, middle segment larger 2-lobed, lateral inner sepals filiform, anther short obtuse." — *Br. Fl.* p. 426. *E. B.* t. 64. *Fl. Dan.* viii. t. 1398 (bona). *Hooker and Graves, Fl. Lond.* iv.

In clayey, chalky or limestone pastures, pits, woods, and on grassy banks and declivities; not very uncommon, but, like our other species of this genus, extremely inconstant to its stations, and variable in quantity in different years. *Fl.* May—July. 2f.

E. Med.—Quarr copse, in some plenty, *Miss Theodora Price*, 1838, and where I have since found it. In a chalky hollow on the N. side of Mersley down, sparingly, 1844. Norris castle, *G. Kirkpatrick, Esq.* Under Arretton down, 1844. [Bloodstone copse, near the new water-works, 1854, *Alfred Goode, Esq.*—Edrs.]

W. Med.—In considerable abundance in the copse of low brushwood (chiefly hazle) on the down at the top of Alvington chalk-pit, on the road from Carisbrooke to Yarmouth, *Miss Dennett*, 1848. In the great plantation of fir, beech, &c., near Westover (several specimens upwards of two feet high), 1843. Field at Egypt, by Cowes, *Rev. Mr. Mann*. Cliff above Gurnet bay, *Miss G. Kilderbee*! Shady lane under Carisbrooke castle, and on the borders of a lane leading from Roughborough farm-house up to the down, *G. Kirkpatrick, Esq.* Wood by Calbourne New Barn, and plentifully on a rough, stony, sloping field nearly at the back of the Tolt copse, *Gatcombe*, 1840.

Tubers 2, roundish and downy, with a few stout fibres above them. *Stem* erect, from 8 or 12 inches to 2 feet high, much more slender than in the last species, usually somewhat glaucous, a little flexuose, terete or subcompressed, with one or two slight angles, glabrous. *Leaves* like those of the last, ovato-lanceolate, bright green and slightly glaucous; the upper ones erect, sheath-like and acute; inferior broader and patent or spreading, more ovate or obovate, obtuse or even rounded, often considerably shining, mostly withered at the tips. *Spike* racemose, few- (from about 4- to 10-) flowered. *Flowers* sessile, much smaller and narrower than in *O. apifera*, distant, scentless, resembling on general inspection some kind of fly. *Sepals* greenish, concave, spreading, ovato-oblong, 3-nerved, their edges revolute, nearly equal, the upper one rounded, the lateral somewhat pointed. *Lateral petals* minute, pilose, brownish purple, linear, and from their revolute margins nearly cylindrical and very slender, like the antennæ of an insect, shorter than the sepals, spreading or porrected; *lower petal* or *lip* about 5 lines in length, much exceeding the calyx, finely pilose or velvety, oblong, trifold, the two lateral lobes small, dentiform, pointing downwards, convex or vaulted, obtuse; inferior middle lobe very much larger, nearly orbicular, but much narrowed in appearance by lateral deflexion, its inferior margin without any appendage, but with a deep

acute (or sometimes at bottom), obtuse notch instead: at the base of the lip are a pair of purplish black tubercular glands: the entire lip is of a dark purplish brown, varying in intensity, and having in the centre a somewhat square and lobed spot of bluish white, which is shining and glabrous: beneath, the colour of the lip is green, with the margins dull purplish. *Bracts* linear-lanceolate, concave, erect, the central and upper ones mostly about as long as the flowers, the lowermost and that immediately above it often considerably overtopping the calyx. *Column* of the *anther* a single hood, without any anterior appendage, greenish at the back; *cells* closely approximate and parallel throughout. *Stigma* a minute, slightly concave, simple disk, with a raised purplish border, in shape nearly a semioval or ellipse bisected through its minor axis, the apex downwards, the truncate summit bearing the large, projecting, whitish *pouches* of the *pollen-masses*, that are bright yellow, bifid, shortly stalked, with peltate, disciform, pellucid glands; *pollen* coarsely granular. *Germen* linear-oblong, usually exceeding the lip in length.

Tribe II. LIMODOREÆ.

Anther 1. *Pollen* cohering firmly in a definite number of simple smooth (not granular or pulverulent) lobes, each of which is a *pollen-mass*, and finally becomes waxy (or rarely pulverulent when bruised in water).

V. SPIRANTHES, Rich. Lady's Tresses.

"*Perianth* ringent; *lip* channelled, clawed, fringed; *stigma* roundish, rostellated; *rostellum* straight, bifid, with an elongated linear appendage between its points."—*Bab. Man.*

1. *S. autumnalis*, Rich. *Fragrant Lady's Tresses*. "Root-leaves oblong subpetiolate, spike twisted unilateral, lip oblong."—*Br. Fl.* p. 418. *Neottia spiralis*, Rich. *Ophrys*, L.: *E. B. t.* 541.

In dry, short, mostly hilly pastures; not unfrequent, and in some years quite abundant. *Fl.* August, September. 24.

E. Med.—In the field between Oakfield and the fruit-garden at St. John's. Pasture at the back of Pondwell, between Ryde and Nettlestone; and between Weeks's and Little Smallbrook farm. Near St. Lawrence, and at the foot of St. Boniface down. In very great abundance in fields immediately at the back of Sea grove, 1839; and in pastures about St. Helens, plentifully. Field near Hardingshoot farm, 1844. On the turf near Sandown fort, 1844. Field at the upper end of Dover street, Ryde, *Miss Theodora Price*! Plentifully on the turf between the Old church sea-mark and the ferry opposite Bembridge, *Mrs. Penfold*. Sir Nash Grese's grounds near Ryde, *B. T. W.* Mount Cleve, Niton, *Miss Sims*!!! On St. George's down, *Mr. G. D. Snooke, jun.*, 1844!!!

W. Med.—Northwood park, *Miss G. Kilderbee*. Near Carisbrooke castle, Colwell and Freshwater, *B. T. W.* Fields about Chale, *Miss Lucas*.

Tubers of the root 1—3, very unequal, downy. *Stems* 3—8 inches high, clothed

Spiranthes aestivalis, Rich., has been found by Mr. Branch, by a small boggy stream between one and two miles from Lyndhurst by the road to Christchurch, in which station I have myself gathered it in 1841. There is some reason for thinking, with Lestibudois ('*Flore de la Belgique*') and others, that the differences between this species and *S. autumnalis*, chiefly consisting in the elongation of its parts, may be due to soil and situation.

with sheathing pointed bracteas, their surface crystalline and shining. *Leaves* radical, ovato-lanceolate, glabrous, acute, ribbed. *Flowers* in a close twisted spike mostly inclining downwards, greenish white, fragrant. * *Bracteas* lanceolate, green edged with white. *Calyx* about as long as the lip, the base of which is enclosed by the two lower sepals, the uppermost incumbent on the corolla. *Petals* small, linear, hairy, closely applied to the upper calyx-segment. *Column* wingless, incumbent on the stigma, which is cloven in front, both enclosed by the base of the caniculate lip of the corolla, which is glandular, crenate and a little spreading at its anterior extremity; *pollen-masses* pale yellow, pear-shaped, deeply cloven. *Germen* twisted, hairy.

VI. LISTERA, R. Br.

"*Perianth* ringent; *lip* deflexed, 2-lobed. *Stigma* transverse, rostellate; *rostellum* elongated, entire, acute, with a minute globose appendage at its somewhat reflexed apex; *column* very short." *Bab. Man.*

1. *L. ovata*, R. Br. *Tway Blade*. "Stem with only 2 ovato-elliptical opposite leaves, column of fructification with a crest in which the anther is placed."—*Br. Fl.* p. 417. *Ophrys*, *L.*: *E. B.* t. 1548.

In moist woods, groves, thickets, copses, and under trees in damp shady pastures; extremely common. *Fl.* May—June. *Fr.* June. 2f.

E. Med.—Plentiful in Quarr copse, Apley wood, and most other places about Ryde. Common at East-end. In Appuldurcombe park, 1845.

W. Med.—Abundant in Tolt copse, Gatcombe, 1845. Woods about Cowes. Calbourne New Barn Hummet, 1845.

Root a bundle of simple, chordiform, flexuose, downy fibres, of a pale reddish brown, sometimes a little creeping. *Stem* solitary, erect, from a foot or under to 18 or 20 inches high, stout, whitish, glabrous and somewhat angular as high as the origin of the leaves; beyond that point much more slender, rounded, dull green and grayish, with short, spreading, viscid, glandulose pubescence, quite leafless, except one or two scale-like acuminate bracts unaccompanied by flowers at some distance from the spike. *Leaves* 2 (rarely 3), opposite, below the middle of the stem, with which they are closely incorporated at their clasping bases, flat and spreading, bright green above, paler beneath, often somewhat shining and clammy, quite glabrous, varying in shape from ovato-elliptical to nearly orbicular, often 5 or 6 inches in length, often very obtuse and rounded, at other times pointed or even acute, with several strongly depressed converging nerves and intermediate smaller ones, the midrib ending in a soft, mucronate, withering point. *Flowers* numerous, in a very loose, cylindrical, tapering, erect spike, small, green, the tip paler and more yellowish. *Pedicels* patent, twisted, glanduloso-pubescent, each from the axil of a green, concave, acute or acuminate, ovate bract, mostly shorter than the pedicel. *Sepals* ovate, concave, bluntish and connivent, single-nerved and bluntly keeled. *Two lateral petals* ligulate, nearly the length of the sepals, slightly pointed, purple-edged, faintly 1-nerved; *lower petal* (lip) straight, flat and pendant, either perpendicularly or beyond that line backwards, of an oblong shape, 4 or 5 lines in length, very deeply cleft into 2 ligulate, parallel or slightly diverging, obtuse segments; the undivided part of the lip traversed by a central ridge or linear gland, which terminates between the segments in a minute round point; base of the lip slightly constricted and folded inwards, not lobed or divided. *Column* very short, its incumbent summit forming a hood to the horizontal anther-cell, which is attached below the centre of the former; *pollen-masses* pale yellow,

* To me this plant is almost inodorous, as is also the much rarer *S. æstivalis*.

pyriform, deeply 2-lobed. *Stigma* whitish, with a broad nectariferous gland beneath its somewhat pointed anterior margin. *Germen* obovoid, 6 ribbed, the ribs mostly purplish, often nearly glabrous. *Capsules* small, obovoid, soft and membranaceous, very widely debiscent whilst still green, crowned with the persistent perianth. *Seeds* white, tunicate similar to those of *Neottia Nidus-avis*.

VII. NEOTTIA, Linn. Bird's-nest.

"*Perianth* hooked; *lip* deflexed, 2-lobed, saccate at the base; *stigma* transverse, rostellated; *rostellum* flat, broad, prominent, entire, without an appendage: *column* elongated."—*Bab. Man.*

1. *N. Nidus-avis*, Rich. *Bird's-nest*. "Stem with sheathing scales leafless, column without any crest, lip linear-oblong with 2 spreading lobes toothless at the base."—*Br. Fl.* p. 418. *Listera*, *Br. Fl.* p. 418. *Ophrys*, *L.*: *E. B.* t. 48.

Sporadical in moist shady places, woods, groves and copses, usually amongst dead leaves; not common, though pretty generally dispersed over the island. *Fl.* May, June. *Fr.* June. 24.

E. Med.—Quarr copse, in a hollow (old stone-pit) to the left on entering from Binstead, 1838. Woods at the Priory, occasionally, 1846. Wood near E. Cowes castle, 1840. A specimen found in Hungerberry copse, 1849. In Northlands copse, Yaverland, three specimens in 1848. Cothey-bottom copse, 1848. Several plants in the large plantation of Scotch fir in Bordwood copse, 1845. Cleveland wood, Appuldurcombe, 1843. At Fern hill, but not seen there of late, *Mrs. Sanders*. A specimen found in the farm at St. John's, in 1843, by *Mr. Lawrence, jun.*

W. Med.—Swainston woods. In the wood by Calbourne New Barn, 1842. In Great Whitcomb wood, near Gatecombe, *G. Kirkpatrick, Esq.*, from whom I had the first specimens and notice of it as an Isle-of-Wight plant!

Root a bundle of short, thick, fleshy, cylindrical or vermiform fibres. *Stem* simple, erect, mostly solitary (sometimes 2), succulent, slightly angular, about 12 or 15 inches high, the superior portion more or less glanduloso-pilose, the inferior glabrous, clothed with several alternate, brownish white, obtuse, ribbed and (especially the upper ones) inflated sheaths instead of leaves. *Flowers* pretty numerous, in a long, open, cylindrical, obtuse spike, about 4—6 inches in length, a few of the lowest remote or scattered; rather large, of a pale dingy brown or fawn-colour all over, slightly glanduloso-pilose. *Bracts* solitary beneath each flower, lanceolato-acute, ribbed, the lowermost one very large. *Sepals* broadly ovate, subacute, concave and connivent, obscurely single-ribbed. *Petals* the length of the calyx, obovate, rounded and entire, only partly concealed by the overlapping calyx-segments, connivent; *lip* very large, hollow and nectariferous within, gibbous without at the base, deeply cloven at its extremity into 2 oblong spreading lobes curving outwards, their margins rounded and crenulate. *Column* short, cylindrical, nearly horizontal; *anther* fleshy, convex, obovate, sessile and incumbent on the stigma, attached to the summit of the column by its broader end, its 2 cells a little diverging behind; *pollen-masses* yellow, oblong, cloven, not elastically cohering, discharged upon a white, fleshy, oblong, hollowed and obtuse lamina lying over the much shorter truncate stigma, and of which it is called by Smith the upper lip. *Capsules* whitish brown, $\frac{1}{2}$ an inch in length, from erecto-patent to a little spreading, oblongo-elliptical, strongly ribbed, of a stiff woody texture, their summits obliquely truncate and uneven, with tubercular points, the remains of the column, &c. *Seeds* minute, like fine sawdust, tunicated, pointed at one end, pale reddish brown.

This singular plant is readily detected at all seasons, as the dry stem and capsules persist in the woods for one or two years after the flowers are over. The flowers possess the odour of *Adoxa Moschatellina* mixed with that of primroses, but fainter.

VIII. EPIPACTIS, Rich. Helleborine.

"*Perianth* patent; *lip* interrupted, the *basal* division concave, *terminal* one larger with two projecting plates at its base above; *stigma* nearly square, rostellated; *rostellum* short, terminated by a globose appendage; *anther* terminal, erect, sessile, 2-celled; *cells* without septa; *column* short; *germen* straight, on a twisted stalk."—*Bab. Man.*

1. *E. latifolia*, Sw. *Broad-leaved Helleborine.* "Leaves oblong or ovate many-nerved, upper ones narrower, raceme elongated many-flowered, lower bracteas longer than the flowers, upper lobe of the lip broadly ovate or deltoid acute somewhat cordate at the base broadest below the middle with 2 tubercles at the base as long as or a little shorter than the sepals nearly quite entire."—*Br. Fl.* p. 416. *Serapias*, L.: *E. B.* t. 269.

In rather moist woods, groves, rough stony thickets, and amongst shaded rocks; not very common. *Fl.* July, August. *Fr.* September, October. 24.

E. Med.—Here and there in Quarr copse, very sparingly. More frequent in the woody landslip between Luccombe and Bonchurch, 1839. Rather frequent in the wooded ground along the shore between Ryde and Binstead, 1849: the plant at this last station is exactly the *E. latifolia* of *Bab. Man.* (2nd. edit.); the flowers are variously suffused with purple, sometimes wholly of a pale green. Between Shanklin and Godshell, *Mr. J. Woods, jun., B. T. W.*

W. Med.—A specimen seen in Slucombe copse, 1845. Woods at Swainston, occasionally. Kingston copse. Tolt copse, near Gatcombe. Rather plentiful in the great plantation at Westover, 1843. A single specimen in a wood by Rowledge.

Root a bundle of long, stout, wavy, cylindrical, downy fibres, of a pale brown colour, nearly the thickness of a crow-quill, amongst which are nestled the hybernacula of the ensuing year's plant, in the shape of large, fleshy, acute buds, often of a bright pink-colour. *Stem* simple, solitary or sometimes 2 or more, from about a foot to 3 feet in height, erect, leafy, solid, glabrous and terete below, somewhat angular above, and downy with jointed, forked and even branched pellucid hairs, more or less coloured pink or purplish, always so at the base. *Leaves* numerous, glabrous, much like those of Lily of the Valley, bright grass-green, scarcely paler beneath and varnished, sessile and clasping, strongly ribbed and striate, the principal ribs very acutely keeled beneath and beset with minute cartilaginous joints, though less conspicuously than along the margins, where they form a sort of fringe, the lowermost leaves of all reduced to close strongly ribbed or fluted sheaths, a little open or subfoliaceous at the top, the next above these very short, nearly orbicular, those on the centre of the stem much the largest, 4 or 5 inches in length by 2 or 2½ inches wide, broadly ovate, acute, spreading or patent, still higher up narrowing to ovato-lanceolate or linear-lanceolate, with long points; all much longer than the internodes, their sheaths diminishing rapidly in length to nearly or quite wanting to the uppermost leaves. *Flowers* very numerous, greenish, or purplish in various degrees, always, I believe, pale on first opening, nodding, distinctly pedicellate, secund or partly spreading, in an upright, terminal, racemose spike, from 4 or 6 to 10 or 12 inches in length, each from the axil of a linear-lanceolate, very acute, ribbed *bract*, of which the inferior exceed the flowers they accompany in length, and often very considerably. *Sepals* glabrous, ovate, acute, concave, moderately spreading, greenish or purplish, the 2 *lateral* a little oblique, sharply keeled behind, about 5-ribbed. *Lateral petals* broadly ovate, about as long as the sepals, ascending and somewhat converging, veined, with a very thick, obtuse and prominent dorsal keel terminating at some distance below the point; *lip* inflated at base into a rather more than hemispherical ribbed sac,

which is purplish and nectariferous within; its terminal division or lobe pinkish, broadly cordate, deflexed, shorter than the lateral sepals, entire, scarcely acute, the apex slightly reflexed, the disk traversed above by a thick, greenish, somewhat rugose keel, expanding backwards at the base of the lobe into a cordate, triangular or 2-lobed, very uneven palate or prominence. *Stigma* white, its anterior face nearly plane and rectangular, nectariferous, the upper edge bearing a small porrected gland, secreting a frothy globule of an extremely viscid milky fluid; * posterior part horizontal, concave, the concavity bounded at the back by a curved margin, ending in either side in a blunt projection, the central portion of the margin thickened behind and bearing the yellowish, sessile, incumbent *anther*, the cells of which are closely contiguous; *pollen-masses* whitish yellow, obpyriform, without stalks or glands, but cohering together at their bases by an elastic filament. *Germen* glabrous or slightly downy, obovoid-oblong or pyriform, with 6 stout blunt ribs, its twisted base attenuated into a short decurved pedicel. *Cap-sule* nodding or drooping.

2. *E. palustris*, Sw. *Marsh Helleborine*. "Leaves lanceolate, bracteas mostly shorter than the slightly drooping flowers, upper lobe of the lip roundish-oval or obovate broadest at or above the middle undulato-crenate very obtuse or retuse with 2 crests at the base longer than the sepals." — *Br. Fl.* p. 416. *Serapias*, *Scop.*: *E. B.* t. 270. *S. longifolia*, *L.*

In marshy or boggy meadows and pastures on a chalky or gravelly soil, also on wet banks of slipped clay along the coast; not uncommon. *Fl.* June—August. *Fr.* August, September. 24.

E. Med.—Shore about Chine Head (Lucombe), and various places in the landslip between Lucombe and Bonchurch. Landslip at Bonchurch, *S. Hailstone, jun., Esq.*

W. Med.—Very plentiful on the banks of slipped land in Colwell bay, with *Gymnadenia conopsea*, and at the upper end of Colwell heath. Marshy meadows at Easton, frequent. Abundant in the half-dried-up clay-pits near Cronmore farm, in which *Sparganium natans* and *Typha angustifolia* grow, 1844. Marsh near Compton, *B. T. W.*

IX. CEPHALANTHERA, *Rich.* White Helleborine.

"*Perianth* converging, *lip* interrupted, the basal division saccate, jointed to the recurved terminal one: *stigma* transverse, *rostellum* 0; *anther* terminal, erect, moveable, shortly and thickly stalked, 2-celled; *cells* with imperfect septa; *column* elongated; *germen* sessile, twisted."—*Bab. Man.*

1. *C. grandiflora*, Bab. *Large-flowered White Helleborine*. Leaves ovato-elliptical to elliptic-lanceolate, bracts longer than

* This viscid fluid, which is quite distinct from the nectariferous secretion of the disk, has for its object the extension of the pollen-masses on falling forwards on the posterior hollow of the stigma, and which, being destitute of the adhesive glands common to other genera of this natural order, could scarcely, without such a provision, be retained long enough on the organ to effect the purpose of fertilizing the latter. In the present genus the form of the anther-cells and pollen-masses is reversed, the smaller end of both being uppermost; in this inverted position the usual appendages of stalks and glands could serve no other purpose than to keep the pollen-masses suspended over, but not in contact with, the stigma, as by the above simple contrivance they most effectually are.

the glabrous ovary (germen), flowers distant subracemose sessile very erect, sepals and lateral petals very obtuse connivent on the included very blunt and rounded lip. *Serapias*, *L.*: *E. B.* t. 271. *Epipactis*, *Sm.*: *Br. Fl.* p. 417.

In deep, shady, mostly hilly woods and dense thickets, on a calcareous soil; very rare. *Fl.* May, June. *Fr.* August. 24.

A single specimen in flower in the wood immediately at the back of Calbourne New Barn, June 8th, 1844. A diligent search in the same and adjoining woods failed to detect a second specimen of this fine species. Found under hazels and beeches in Clarken lane, on the East side of Carisbrooke castle, several specimens, 1847, *Miss Dennett* (v. icon. color. præstantiss. 1848).

Plant quite glabrous in every part. *Root* somewhat creeping, forming a tuft of long, stout, brownish or whitish and flexuose fibres, running pretty deeply downwards. *Stem* 1, 2, or many from the same root, and forming clumps, erect, leafy, from a foot or less to 20 inches or even 2 feet in height, greenish white, a little flexuose, hard and rigid, subcylindrical below, more or less angular and compressed higher up, ribbed with sharp prominent ridges that are rough with crystalline points, especially at and towards the summit of the stem, which presents in consequence a frosted appearance, or as if coated with a saline efflorescence. *Leaves* alternate, remote, the lowermost of all sheath-like, short, erect, obtuse and inflated at top, closely embracing the stem, strongly ribbed and colourless, but soon becoming brown and withering; the next in succession clasping, with short sheathing bases, those still higher simply sessile, scarcely or but slightly clasping, and without sheaths, bright green above, a little paler underneath, many-ribbed, suberect, patent or spreading, flat or, especially the higher one, folded, varying from broadly elliptical to ovato-elliptical or elliptic-lanceolate, from about $2\frac{1}{2}$ to 3 or $4\frac{1}{2}$ inches in length, acute but not acuminate, a few of the lowermost and shortest obtuse or rounded, the uppermost insensibly changing to narrow-lanceolate bracts, of which the inferior greatly exceed the flowers in length, the ultimate bracts alone reduced to the length of the ovary or nearly so. *Flowers* alternate, axillary and terminal, remote, sessile, very erect, usually occupying the superior half of the stem, but occasionally beginning very low down, constituting a kind of leafy raceme, few or sometimes very numerous, in small or starved specimens sometimes with only a single flower at the summit of the stem, ovoid, rather under an inch in length, exclusive of the very upright, somewhat twisted, roughish and prominently and obtusely 6-ribbed ovary. *Sepals* white or rather cream-coloured, having a manifest tinge of green or yellow on comparison with the purer white of *C. ensifolia*, connivent, oblongo-elliptical, obtuse, 5—7 nerved, the median nerve forming a keel at the back. *Lateral petals* like the sepals in form and colour, but about a third part shorter than these, equally obtuse and similarly nerved, keeled and connivent; *inferior petal* horizontal, porrected, much shorter than the sepals or lateral petals, which together either close over and conceal it entirely, or diverge sufficiently to allow of its anterior segment appearing between their extremities; posterior part inflated or sac-like, gibbous at the back underneath, with a deep fovea or depression in the centre lengthwise, 2-lobed above, the lobes white, nearly orbicular, almost joining over the column, which thus occupies the upper part of a subglobose pouch or cavity,* the bottom of which is bright yellow and fulvous within, and rayed with prominent rugose and tawny lines; *anterior segment or lip* forming a short trough-shaped concavity, its sides erect or incurved, orbicular and crenulate on the margin, which is extremely obtuse, rounded and a little deflexed in front, the disk golden yellow mixed with fulvous, and traversed posteriorly by three boldly prominent, undulated, orange-tawny ridges. *Column* elongated, white, slightly curved forwards and ascending, semiterete, its under or anterior face plane; 3-lobed at top, the central lobe broad, serving as a filament to carry the *anther*; lateral lobes (the abortive stamens?) small, tooth-like, obtuse

* This cavity resembles in form the corolla of *Scrophularia*.

and somewhat curved inwards towards the expanded margin of the transverse, roundish-elliptical, nectariferous disc (*stigma*), which occupies the under side of the column immediately below the anther, and is devoid of any kind of appendage (*rostellum*); *anther* terminal, moveable on the middle lobe of the column, greenish white, ovoido-elliptical or subhemispherical, gibbous, its base resting in a cavity of the latter betwixt its 3 lobes and the stigmatic disk, and thus immediately over this last, 2-celled, the cells erect, parallel, conjoined, imbedded in the substance of the anther, which serves as a connectivum, the sutures opening in front longitudinally. *Pollinia* (pollen-masses) white, sublinear, bipartite, curved, without stalks or glands. *Pollen* farinaceous, slightly cohering. *Capsules* erect, from 1 to 1½ inch in length, oblongo-elliptical or subclavate, straight or a little curved and flattened on the side next the stalk, strongly and obtusely 6-ribbed, crowned with the persistent perianth.

The flowers of this species resemble buds, and in their form remind one of miniature tulips, or of the blossoms of *Magnolia grandiflora* when just ready to open. Smith says they are "perfectly inodorous at all times," but my friend Miss G. E. Kilderbee attributes to both this and *C. ensifolia* the sweetness of the tuberoses. I once thought I perceived some such odour in a large number of specimens of each enclosed in a tin box at night, but the impression was too weak to be trusted to implicitly, and I could never be made sensible of it in individual plants. I am not however in general alive to the fragrance of *Spiranthes autumnalis*, so pleasant to most people, nor to that said to reside in the flowers of *Linaria repens*, which I have witnessed instantly perceived by one who had not previously seen or known the plant by name.

Cephalanthera ensifolia, Rich. (Narrow-leaved white Helleborine?).—"Between Shanks and Godshall," *Mr. J. Woods, jun.*, in *Bot. Guide* (*Serapias longifolia*). The great confusion of the synonyms betwixt *Epipactis palustris* and *E. ensifolia* of Swartz makes it impossible to determine which of the two species was intended by Mr. Woods under his *Serapias longifolia*, above referred to, these names being inextricably entangled by Linnæus, Smith and Hudson, and applied to three several species by one or other of these authors. At this time, when all three are well known and discriminated, it would be useless attempting to undo a knot where nothing certain could be achieved towards ascertaining the point in question. As *C. ensifolia* grows intermixed with *C. grandiflora* in the woods of Hampshire, it may be the species intended by Mr. Woods, but, as the name *longifolia* has been used to designate our *Epipactis palustris* by some, and Hudson confounds it with *Cephalanthera grandiflora*, it is quite as likely that one or other of the two last may be really pointed at in the old 'Botanist's Guide.' I am inclined to believe rather that *C. grandiflora* is the one intended, unless the true *C. ensifolia* were the species really found here by Mr. Woods.

C. ensifolia occurs abundantly in woods in several parts of the county, and may therefore be hereafter found on this island, as well as the one just described. It differs from *C. grandiflora*, to which it bears a close affinity and resemblance, in the following particulars, gleaned from a comparison of an extensive series of both kinds, gathered in their native station, where they are frequently found growing together:—*C. ensifolia* is a smaller, more delicate and slender plant, with far narrower leaves, of a thinner and drier texture, like those of a grass, which however vary much in breadth, the lowermost being sometimes very broadly lanceolate, but the upper always narrow and considerably tapering at the point, and, from being in general more closely set, present a sort of a distichous mode of arrangement in appearance only. The bracts, even beneath the undermost flower, are extremely small, short and narrow, and in those at the top of the stem very minute indeed. The flowers are confined to quite the higher position of the stem, are much closer together or approximate, and are not found in the axils of any but the greatly reduced leaves or bracts; hence they appear subspicate, like those of *Epilobium angustifolium* for example; whereas in *C. grandiflora* the flowers originate at or even below the middle of the stem, and accompany the larger leaves, whence they

Order LXXIII. IRIDACEÆ.

"*Limb* of the *perianth* 6-cleft or 6-partite, sometimes irregular. *Stamens* 3, inserted into the base of the outer segments. *Filaments* sometimes united. *Anthers* fixed by their base, opening outwards. *Ovary* 3-celled, many-seeded. *Style* 1. *Stigmas* 3, or 1 with 3 divisions, often petaloid or 2-lipped. *Capsule* 3-celled, 3-valved; *valves* bearing the dissepiments in the middle. *Seeds* round, hard. *Albumen* horny or firmly fleshy. *Embryo* with the same direction as the seed.—Herbs, *rarely* under-shrubs. *Leaves* equitant (*except* in *Crocus*). *Flowers* *spathaceous*, sometimes partly *subterranean*."—*Br. Fl.*

I. IRIS, Linn. Flag.

"*Perianth* 6-cleft, each alternate segment longer and reflexed. *Stigmas* 3, petaloid, covering the stamens."—*Br. Fl.*

1. *I. Pseud-acorus*,* L. *Yellow* or *Water Flag*. *Perianth* beardless, inner segments smaller than the stigmas, leaves ensiform keeled, seeds angular. *Sm. E. Fl.* i. p. 49. *Br. Fl.* p. 427. *E. B.* ix. t. 578.

In shallow pools, ditches, streams, wet meadows and low marshy or moory places; abundantly. *Fl.* May—August. *Fr.* September. 2f.

E. Med.—On the Dover, Ryde. Meadow within the walls of Quarr abbey, abundantly, and flowering freely. Most profusely on moory pasture-land along the left of the road at the entrance to Sandown village from Brading, 1849. Fosse of Sandown fort, and wet meadows above Alverstton, in great profusion. Abundant in wet moory pastures about Newchurch, Mersley, &c., 1844.

W. Med.—About Cowes, Yarmouth and Newport.

assume a sort of racemose arrangement, smaller, of a purer white (not cream-colour as in the other) and less erect, the ovary diverging at an angle more or less considerable from the stem, sometimes nearly at a right angle to it. The *perianth*-segments do not close so completely over the lip, and the sepals are in this species narrower than the lateral petals, and so *acutely pointed* as to be almost acuminate. The lateral petals themselves are also slightly pointed, and much broader in proportion than in *C. grandiflora*. Moreover, the anterior margin of the lip is usually slightly triangular and pointed, but this character I find liable to exception. Finally, *C. ensifolia* lasts a shorter time in flower, if it does not begin to flower earlier, than *C. grandiflora*, which continues in blossom through a great part of June, whereas the other has all its terminal buds open by the end of May in this part of England, and was beginning to fall and look shabby on the 27th of that month when my last specimens were gathered. Indeed, the blossoms of this species, from their more delicate texture, fade with wonderful rapidity on being gathered, whilst those of *C. grandiflora* merely turn partially brown.

* The specific name of *False Acorus* was given to this plant from the resemblance its leaves bear to those of the Sweet Flag (*Acorus Calamus*, L.), not yet detected in this island. The word Flower-de-Luce is said to be corrupted from Fleur-de-Louis, consequent on its adoption as an armorial device by the French king, Louis VII.

Plant not growing in clusters like the next species. *Root* (rhizoma) thick, fleshy, running horizontally, subcylindrical, with numerous pale fibres. *Stem* erect, straight or slightly wavy, terete below, faintly furrowed above, pale green, alternately branched, branches simple, axillary. *Leaves* ensiform, acute, their tips oblique, 2, 3, or 4 feet long and from 1 inch to 2½ inches wide, erect, pale green, with a glaucous cast, and having a thin, sharp, sometimes double central keel running their entire length on both sides; those from the root equitant, on the stem distant, alternate and sheathing at the base. *Flowers* large, erect, inodorous, bright golden yellow, 2, 3, or more together, successively protruded from large, unequally 2-leaved, furrowed sheaths or *spathes*. *Exterior petals* very large, beardless, roundish ovate, spreading or deflexed, of a rich yellow marked towards their claws with a deeper-coloured field, either plane or punctately veined and streaked with purplish; *interior petals* very small, erect, ovato-oblong, shorter than the stigmas, their claws convolute. *Stamens* inserted at the base of the larger petals, shorter than the stigmas; *anthers* linear-oblong, purplish brown, yellow at the back; *pollen* yellow, globose. *Stigmas* the colour of the petals, nearly erect, their summits 2-lobed, the lobes overlapping, jagged and crenate on the margin, and covering a short, entire, membranous, scale-like appendage or lip. *Capsules* yellowish green, lax, drooping or pendulous, from 2 to 3 inches in length, oblong, very obtusely trigonous and lobed, suddenly contracting at their apex into a short, blunt, beak-like process; *valves* not widely dehiscing, leathery. *Seeds* very numerous, pale yellowish brown, smooth and shining, orbicular, semiorbicular or somewhat trigonate in the same cell, thick and rounded at the back, cuneately attenuated on their inner side to their margin, closely packed horizontally by their flat surface in a single or double series; *testa* dry, loose and husky.

2. *I. fœtidissima*, L. *Stinking Gladdon* or *Gladwyn*. *Roast-beef Plant*. Leaves sword-shaped plane, perianth beardless, its inner segments spreading, stem 1-angled, seeds globose pulpy. *Sm. E. Fl.* i. p. 50. *Br. Fl.* p. 427. *E. B.* ix. t. 596. *Curt. Br. Entom.* vii. t. 292 (fruit).

β. *citrina*. Flowers of a uniform pale colour.

In groves, thickets, copses, pastures, borders of fields, and on hedgebanks; plentiful in most parts of the island. *Fl.* June, July. *Fr.* September, October.

E. Med.—Everywhere around Ryde; about Quarr abbey, in Quarr copse, Marina wood by Apley, St. John's wood, &c. Plentiful all along the Undercliff, at Bonchurch, Steephill, St. Lawrence, &c.

W. Med.—Woods around Cowes and Yarmouth, abundantly. About Mottes-ton, but not common in that S.W. part of the island.

β. Wood at Yarmouth.

A species growing most commonly in clumps, and distinguished from most others of the genus by the total absence of the usual glaucous colour in the leaves. *Root* short, fleshy, cylindrical and horizontal, about the thickness of the middle finger, brownish and wrinkled, emitting several very long, white, tapering and transversely rugose fibres. *Stem* solitary, many-flowered, flexuose, a little compressed and obscurely 1-edged, a character much more conspicuous when viewed in the closely investing upper leaves, which are acutely folded or conduplicate behind, but follow the rounded contour of the stem anteriorly. *Leaves* numerous, ensiform, equitant, often above 2 feet long and above an inch in width, dark rich shining green on both sides, deeply striated, firm and rigid, quite plane or without a keel, their edges cartilaginous and finely serrulate towards the very acute point; one or two of the leaves mostly overtopping the stem, the rest shorter than or equalling the latter, those on the stem itself closely sheathing. *Flowers* several, on obtusely trigonous peduncles that elongate during inflorescence, smaller than in the last species and of a firm texture, handsome but not showy, with a peculiar scent, different from that of the leaves, expanding one or two at a time from the deciduous, diphyllous, lanceolate *spathe* and the enveloping hollow upper

leaves (or bracts?), that quite conceal them in the bud. *Tube of the perianth* short, filled with a melliferous fluid, the 3 *exterior petals* much the largest, greatly longer than the stigmas, spreading and reflexed, the limb ovate, violet-blue with copious branching purple veins, nearly white towards the broad and pale dingy yellow claws, that are streaked and dotted with purplish brown, most thickly towards their margins; 3 *inner petals* erecto-patent, much shorter and smaller than the outer, with narrow involute claws, the limb ovato-oblong, entire, not reflexed, paler and far less distinctly veined than in the others. *Stamens* about the length of the stigmas; *anthers* purplish or whitish; *pollen* pale yellow. *Stigmas* pale fuscous, incumbent on the anthers, but a little distant from the petals, and shorter than the three inner petals, reflexed, obtuse and bifid but not lacinated at their summits, with an acute ridge or keel, the broad membranous border of each stigma terminating beneath its bilobate extremity in 2 free (not adnate) toothed or notched divisions. *Germen* oblong, 3-lobed, each lobe and the intermediate angles with a central furrow. *Capsule* about 2 inches in length, oblong, obscurely triangular, not beaked, yellowish when ripe and widely dehiscent, with three twisted leathery *valves*, each bearing one row or more of roundish, berry-like, bright orange or scarlet and highly polished seeds on either side of the broad central dissepiment close to its inner edge. *Seed* globose, covered with a spongy, succulent and slightly acrid pulp, the *albumen* very large and horny.

A handsome plant, and a conspicuous ornament of our woods and hedgerows in autumn and winter, from the contrast of its dark evergreen leaves with the brilliant orange or scarlet seeds, that remain very long attached to the widely spreading valves of the capsule; nor are its delicately pencilled flowers eclipsed in beauty by many blossoms of a gayer season. A variety with variegated leaves is grown in gardens at Ryde, &c. The smell of the bruised leaves is by some persons thought to resemble that of roast beef, by others it is compared to rancid bacon, dissimilar ones certainly, and indicative of the extreme ambiguity of impressions received through the weakest and most deceptive of the senses. To myself the odour is by no means unpleasant, recalling that of milk heated till a pellicle has formed on its surface.

The var. β . is a most remarkable one, of which I met with a few specimens in a wood near Yarmouth in July, 1847. In these the flowers were of an uniform lemon-yellow verging upon white in the segments of the perianth, without the least of the usual purple colouring or trace of the dark pencilling, except a few faint veins, of a somewhat deeper colour than the ground. The still unopened buds were equally pale, but the plant possessed the smell and other characters of the species unaltered. This singular variety much resembled the yellow-flowered one of *I. spuria* (δ) *halophila* of Curtis, Bot. Mag. vol. 48, t. 1131.

The present is rather a maritime and western species, becoming manifestly scarcer on the mainland, at the distance even of a few miles from the coast, and is generally rare in all the midland and eastern counties of England.

Order LXXIV. AMARYLLIDACEÆ, R. Br.

"*Limb of the perianth* coloured, 6-partite or 6-cleft. *Stamens* 6, inserted at the bottom of the segments, sometimes united by a membrane. *Anthers* opening inwards. *Ovary* inferior, 3-celled; the *cells* many-seeded, or in those whose fruit is fleshy 1—2 seeded. *Style* 1. *Stigma* 3-lobed. *Fruit* capsular; either dry with 3 valves bearing the dissepiments in the middle, 3 cells and many seeds; or fleshy 1—3 seeds. *Integument* of the seed not crustaceous. *Embryo* straight, in the axis of a fleshy albumen,

having the same direction as the seed. — Flowers large, generally of a bright colour. Leaves fleshy, indistinctly nerved, all radical. Roots bulbous."—*Br. Fl.*

I. GALANTHUS, Linn. Snowdrop.

"*Perianth* campanulate, of 6 pieces, 3 outer ones spreading, 3 inner smaller, erect, emarginate. *Anthers* opening by a pore. *Seed* with a whitish skin. *Flower* from a *spatha*.—*Scape solid*." *Br. Fl.*

†? 1. *G. nivalis*, L. *Snowdrop*. *Fair Maids of February*. *Br. Fl.* p. 480. *E. B. t.* 19. *Fl. Dan.* x. t. 1641.

On banks amongst brushwood, in thickets, and hedges in close lanes, apparently wild; also naturalized in orchards, groves and pastures near houses, in several places. *Fl.* February, March. *Fr.* May. 24.

E. Med.—The Grove, near Brading, naturalized, [the late] *Lady Brenton*!! On Nunwell Warren, *Dr. Bell-Salter*. Naturalized under trees below the Rookery, Nunwell. Very plentifully at Gillmans, near Champion, *G. Kirkpatrick, Esq.*!!! At King's quay, *Rev. James Penfold*.

W. Med.—In great profusion on the steep bushy sides of Snowdrop lane, immediately W. of Gatcombe park, between that and Ganson's barn, and due N. of Gatcombe village, also in several spots adjoining the park. It grows, I am told, in several places about Chillerton, and on a bank at the entrance to Gatcombe park, also in a field at Shorwell. Abundant by the roadside going into Chale farm, Blackgang, *Dr. Martin*. In a little wood by the Yar below Freshwater mill, on its E. bank, *Rev. James Penfold*!!!

The white ovate *bulb* sends up a simple scape, from 4 or 5 to 12 inches high. *Leaves* 2, shorter than the stem, linear, pale glaucous green, with an obtuse, glandular and whitish tip, concave above, strongly keeled beneath, invested for about $\frac{1}{3}$ rd their length with a white, membranous, abrupt sheath; after flowering the leaves droop and finally spread upon the ground. *Scape* somewhat ancipital, bearing a solitary pendulous flower, its *peduncle* partially enclosed in a transparent *spathe*, bifid at the point, with green inflexed edges, and very little shorter than itself. *Segments of the perianth* at first connivent, at length spreading, the 3 outer ovate, pure white; the 3 inner cuneato-cordate, notched in the middle, tipped with green on their outer edge, furrowed and elegantly streaked with the same colour on the inner side. *Anthers* orange-coloured, tapering, on very short *filaments*, erect, awned, bursting at the summit on their inner face. *Style* slender, tapering, a little longer than the stamens; *stigma* a minute tuft of glandular hairs. *Capsule* drooping, about $\frac{1}{2}$ an inch in length, oblong-obovate, very obtusely trigonous, with a flat circular scar at top, seldom ripening.

The Snowdrop has a faint but perceptible and delicate fragrance, not commonly noticed. In the wild state, as also in gardens, the seeds are rarely perfected, but the capsule, though fully and abundantly formed, drops off before arriving at maturity.

It does not appear certain that there is more than one species of the Snowdrop, though a second, *G. plicatus*, Bieb., is adopted by many botanists; by others it is considered a variety of the present. As the point is still unsettled, and the majority incline to the latter opinion, I have refrained from giving a specific character.

II. NARCISSUS, Linn. Daffodil.

Perianth coloured, tubular at the base, with a spreading 6-partite limb, and a campanulate or cup-shaped crown or nectary,

within which are the *stamens*. *Anthers* dehiscing longitudinally. *Flowers* from a *spatha*.

Elegant bulbous plants, with white or yellow often highly fragrant flowers, natives of the South of Europe, West of Asia and North of Africa. Of all the numerous species not one is indigenous to the American continent.

1. *N. Pseudo-narcissus*, L. *Common Daffodil*, vulg. *Daffodown-dilly*. Vect. *Lent* or *Lenten Lily*. * *Spathe* single-flowered, cup campanulate erect the margin obscurely 6-lobed crisped as long as the ovato-acute segments of the perianth, leaves about as tall as the scape. *Sm. E. Fl.* ii. 132. *Br. Fl.* 430. *Bab. Man.* 299. *Bert. Fl. Ital.* iv. 17. *E. B. i. t.* 17. *Fl. Dan.* xiii. t. 2170.

β. Flowers double or semidouble.

γ. *concolor*. Smaller; segments of the perianth coloured, nearly flat, but little spreading. *N. Pseudo-narcissus*, *Brot. Fl. Lusit.* i. p. 549? *N. Pseudo-narcissus* β., *Bert. Fl. Ital.* iv. 18.

————— “ Daffodils,
That come before the swallow dares, and take
The winds of March with beauty.”
Winter's Tale.

“ When Daffodils begin to peer,—
With, heigh! the doxy over the dale,—
Why, then comes in the sweet o' the year,
For the red blood reigns in the winter's pale.”
Winter's Tale.

In moist woods, copses, orchards, meadows, pastures, and on grassy banks; abundant in many places, and truly indigenous. *Fl.* March,† April. *Fr.* June. 24.

E. Med.—Plentiful in Quarr copse, especially at the end near the old abbey walls, and in the field they enclose. In considerable plenty in one part of the large copse (Puckett's copse) between Quarr abbey and Ninham, 1845. In very great profusion underneath the rookery at Nunwell. In a field close by Ninham farm, near Ryde. Sparingly in Marina wood by Apley, and in that along the shore between Ryde and Binstead. Wood near St. Helens, and covering acres in Centurion's copse. Abundant in Firestone copse, from whence the children bring large bouquets of the flowers in the spring to Ryde. Field by Guildford farm, near Haven street; and in one by Coppid hall. On hedgebanks and borders of fields along the road at Sandford, and at Appuldurcombe. In vast profusion and very fine all over a wood, chiefly of beech, known as Bottom wood, occupying a valley between two slopes close to Sandford, on the S. side of the village, and in a large pasture adjoining, also in several fields about Winston farm, 1843. In a little copse near Woodhouse farm, Fernhill, abundant, 1843. In a large pasture-field a little S.E. of Hardingshoot farm, with *Tulipa sylvestris*, 1846. Field at Wootton bridge, nearly opposite Kite hill. In the greatest profusion on the N. and E. sides of the mount on which the church at Godshill stands, *Rev. Wm. Darwin Fox !!!* Field at Winston or Winson, [*the late*] *Edward Vernon, Esq. !!!*

* Corrupted in some places into Lantern Lilies. Daffodil or Affodil seems to be a mere corruption of *Asphodel*; *Asphodelus*, Lat. *Asφόδηλος*. See Turner's *Herball*. p. 24.

† In the extraordinarily mild season of 1846 the wild Daffodil was in full flower soon after the middle of February.

W. Med. — Thicket near Sandway, 1846. Wet thicket by Woolverton, near Shorwell, 1846. Near Freshwater, *Rev. James Penfold*. Plentiful between the second and third milestone out of Newport to Godshill, and at Chillerton, *G. Kirkpatrick, Esq. !!!* Near Swainston, *Rev. Wm. Darwin Fox !!!*

β . Occasionally a specimen or two growing with the single sort, but rarely. A solitary clump in Centurion's copse, amongst thousands of the single kind, unquestionably wild, and perfectly similar to the double garden Daffodil. A very double but certainly wild specimen on a bank near Yaverland. More frequent in meadows and pastures near habitations; in a field near Bembridge farm. Field at Woodvale, W. Cowes.

γ . On the steep bushy bank behind Apse farm, overlooking the garden, in which it also grows plentifully, though appearing rather to have encroached upon the grass-plats from the station above than to have escaped from the former, where it has not become double.

Plant from about 6 to 12 inches high, rarely taller. *Bulb* from the size of a nutmeg to that of a walnut, covered with a brownish cuticle, and emitting many whitish fibres from the base. *Leaves* usually two or three, seldom more, bluish or glaucous green, erect, narrow, channelled and twisted, sometimes $\frac{1}{2}$ an inch broad, obtuse, rounded and slightly thickened at the apex, scarcely keeled, about as long as the scape, attenuated downwards, and enclosed below in a short, membranaceous, truncate sheath. *Scape* 2-edged, twisted, strongly furrowed. *Flower* solitary, large ($1\frac{1}{2}$ inch to 2 inches long), handsome, drooping in the bud, afterwards horizontal or nearly erect, with a weak but agreeable fresh scent. *Spathe* wrinkled, scariose and membranaceous, brownish towards the point. *Perianth* in six mostly unequal, ovate or ovato-lanceolate, acute, waved or twisted segments, pale yellowish white, merging into yellow and green at the back on its tubular portion. **Cup* (covona, *DC.*; nectary, *Sm.*) of an elegant golden yellow, tubuloso-campanulate, the margin obscurely cut into six irregularly notched and crisped lobate segments. *Stamens* much shorter than the cup, erect; *filaments* tapering, yellow; *anthers* quite erect, long and narrow, with whitish yellow pollen. *Style* a little longer than the stamens, trigonous, each angle terminating in a hollow fringed lobe of the stigma. *Capsule* the size of a hazel-nut, obovato-subglobose, very obtusely trigonous, yellowish brown when ripe, coriaceous. *Seeds* large, numerous, deep rich brown, highly polished, ovoido-rotundate or by compression subangular, with a crest (raphe) along their inner side; at length wrinkled by the contraction of the fleshy albumen.

In the wild double variety, β , the perianth-segments are always of a full yellow like the cup, and in this state I cannot distinguish it from the common great yellow Daffodil of the gardens, though that is supposed to be a different species, the *N. major* of the 'Botanical Magazine,' and a native of Spain. In one or two of the stations here given it is possible the plants may have originated from gardens, though their smaller size is against such a supposition; in the remaining localities the sequestered situation is without doubt unexceptionable, and an inspection of the double variety there, growing amidst the common or single wild sort, will, I think, suffice to convince any one of the latter being equally the parent of the wild and garden double Daffodils.

The variety γ . differs from the common state of the plant in having the perianth-segments of almost as deep a yellow as the cup, much less spreading, nearly plane or scarcely at all twisted, narrower, firmer or less membranaceous in texture, rounded or somewhat obtuse, without a minute but very distinct apiculus. The whole plant, though variable in size, is much smaller than the common form, which is, I have little doubt, the *N. bicolor* of Brotero, whilst this is the *N. Pseudo-narcissus* of the same author, and, as the late Professor Don thought, of Linnaeus also. It almost seems to connect our common species with the *N. minor* of the gardens.

The single wild Daffodil has by some been supposed of exotic origin, and to have been introduced by the monks in the middle ages, from being so often found near the ruins of monasteries, but it is certainly indigenous to the South and middle of England in the most sequestered places, though in early times, when

our gardens could boast but little variety, the more showy productions of our fields and groves would naturally attract attention from the horticulturist, and, escaping from his care, be subsequently found established as often in the vicinity of such spots as in their more natural localities.

†2. *N. biflorus*, Curt. *Pale Two-flowered Narcissus*. *Primrose Peerless*. Spathe mostly 2-flowered, cup very short depressed scarious and crenate at the margin, leaves acutely keeled twisted their edges inflexed. *Curt. Bot. Mag.* vi. t. 197. *Sm. E. Fl.* ii. 132. *Br. Fl.* 430. *Bab. Man. E. B.* iv. t. 276.

In dry sandy fields, woods, meadows, pastures, orchards, and on hedgebanks, occasionally, but scarcely indigenous. *Fl.* April, May.

E. Med. — In several fields between Wootton bridge and the church, but very sparingly scattered, 1842. Sparingly naturalized in a meadow nearly facing the stables at Steephill, *Dr. Martin !!!* A specimen or two found in Marina wood, at Apley, by [the late] *A. T. S. Dodd, Esq.*, 1846!!! In some plenty in the meadow near Hardingshoot farm in which *Tulipa sylvestris* grows, 1849.

W. Med. — A single large tuft in a meadow behind Gurnet bay, 1843. In fields on the West side of Gurnet bay, in several places, but particularly about Hornhill copse, where it grows in very considerable plenty on the grassy banks and borders of the fields, and even in the wood itself; most completely naturalized, and more abundant than I have ever before met with it in this island, 1846. In a little copse near Place farm, W. Cowes, *Miss Kilderbee*, 1846. I understand from Miss Clarke, of Yarmouth, that it grows very abundantly in a small field by the Yar, at the N.E. angle of Thorley copse, opposite Yarmouth mill, as well as in the copse itself, 1846. A solitary plant in a sandy arable field by Marvel copse, 1845. In a field near Wilmingham, scarcely wild, *Rev. James Penfold*. Hedgebank near Thorley, far from any garden, but in very moderate quantity, *id. !!!* Field by Debborne farm, in some plenty, *Miss G. Kilderbee !!!* (a suspicious station). Gurnet wood, *ead. !*

A far larger and stouter species than the last, growing in clumps, very common in cottage-gardens, from whence it often escapes into the adjoining fields, particularly where the soil is light and sandy, or is conveyed to those more remote with compost; but, though long persistent when once introduced, as is the case with many bulbous plants, it has not quite the appearance of being really native with us, whatever it may be in the West of England or about Dublin, where it is stated to be common. *Bulb* large, 15 to 18 lines in diameter, with a pale brown cuticle and many stout white fibres. *Leaves* two or three, sometimes four or five, about as long as the scape or sometimes a little longer, from about 4 to 9 or 10 lines in width, very thick, firm and fleshy, somewhat glaucous, deeply caniculate, twisted, with pale, thickened, obtuse tips, grooved at the back, with a thin acute keel running the whole length of the leaf, the edges of which are partly inflexed. *Scape* mostly solitary, sometimes two, from about 12 or 15 inches to 2 feet high, acutely ancipital, much compressed, deeply striated, hollow and twisted, 1- or more commonly 2-, seldom 3-flowered. *Spathe* pale brown, withering. *Flowers* large, often two inches across, very sweet scented; *perianth-segments* white very slightly tinged with yellow, obovato-rotundate, mostly retuse, with a glanduloso-pilose mucro, the three *exterior* segments largest; all spreading, undulated or inflexed, faintly striated. *Cup* yellow, saucer-shaped, very short and depressed, plaited and crenate on the margin, which is sometimes, though, as Bertoloni observes, not always, whitish and scarious, much contracted at the top of the long, slender, trigonous, green tube. *Stamens* unequal, their *filaments* adnate with the tube for almost their entire length; *anthers* linear-lanceolate, pale buff, their summits twisted and recurved, three of them just visible at the contracted orifice of the tube. *Style* grooved, twisted; *stigma* of three flat, roundish, fringed lobes.

The Primrose Peerless seems to be more frequent in the West of England (as Gerard remarks) than in the eastern counties, and Mr. Mackay, in the 'Flora Hibernica,' gives it, without comment, as a native of the sister isle; yet I appre-

hend we can boast of but one truly indigenous species of *Narcissus* in Britain. The scent of the two-flowered *Narcissus* is very powerful, reminding one of the fragrant *Magnolia glauca* or *grandiflora*.

Order LXXV. LILIACEÆ, *Juss.*

"*Perianth* inferior, petaloid, 6-parted. *Stamens* 6, inserted into the receptacle or on the perianth; *anthers* bursting inwards. *Ovary* superior, 3-celled. *Ovules* many in each cell. *Style* 1; *stigmas* 3 or 1. *Fruit* dry, capsular, bursting with 3 valves bearing the dissepiment on their middle."—*Bab. Man.*

Tribe I. *TULIPEÆ*.

"*Leaves of the perianth* distinct. *Cells of the capsule* many-seeded. *Seeds* flat, placed closely one above another; *testa* pale or fuscous, not crustaceous."—*Bab. Man.*

I. *TULIPA*, *Linn.* Tulip.

"*Perianth* campanulate, of 6 pieces, without a nectariferous depression, deciduous. *Anthers* erect. *Stigma* sessile, 3-lobed. *Capsule* trigonous. *Seeds* flat.—Flowers usually solitary, rarely two on each stem."—*Br. Fl.*

† ? 1. *T. sylvestris*, L. *Yellow Wild Tulip*. "Stem 1-flowered somewhat drooping, leaves of the perianth ovato-acuminate bearded at the extremity, stamens hairy at the base, stigma obtuse."—*Br. Fl.* p. 443. *E. B.* t. 63.

In clay or limestone meadows and pastures, old quarries, chalk-pits and orchards; very rare, and possibly not indigenous with us. *Fl.* March—May. 24.

E. Med.—In a moist clayey pasture-field about the eighth of a mile S. by E. of Hardingshoot Farm, betwixt that and the former site of Little Hardingshoot, but not abundant, and flowering very sparingly, Feb. 25th, 1846. Mr. W. Whale, of Andover, showed me a specimen of the wild Tulip which he had received from a lady who gathered it in the Isle of Wight, but no station was appended to the label.

Tribe II. *ASPHODELEÆ*.

Root bulbous. *Fruit* dry, capsular. *Flowers* usually on a leafless stem or scape, and with membranaceous bracteas or spathas, but no true leaves, at the base of the pedicels, which are not jointed with the flower. *Ovules* numerous in each cell of the ovary. *Seeds* with a black, crustaceous, shining coat.

The elegant *Narcissus* of the poets (*N. poeticus*) is partially naturalized on grassy slopes in the grounds of Norris castle, but has been too evidently introduced there to find a place in this Flora.

II. ORNITHOGALUM, Linn. Star of Bethlehem.

"Perianth spreading, of 6 sepals, persistent. Stamens hypogynous, scarcely adhering to the perianth, alternately larger or dilated at the base. Capsules with 3 angles and 3 furrows.—Flowers white, racemose or corymbose, on a leafless scape. Bractæas membranaceous."—Br. Fl.

1. *O. umbellatum*, L. Common Star of Bethlehem. "Racemes corymbose, peduncles longer than the bractæas, filaments subulate simple."—Br. Fl. p. 441. E. B. t. 130.

β. "Leaves very slender, linear-filiform."—Br. Fl. Bertol. Fl. Ital. iv. p. 95. In meadows, thickets and pastures; rare in an apparently native condition; rather more frequent as naturalized about houses in fields, orchards, and on lawns. Fl. April—June. 24.

E. Med. — Naturalized on the lawn behind Osborne house, 1846. In a hay-field at Newchurch, in some abundance, 1846, but the meadow was some thirty years ago the site of cottage-gardens. Meadows about Steephill, in several places, appearing to me truly wild, *Albert Hambrough, Esq.*, and *Dr. Martin!!!*

W. Med. — A few plants found in Calbourne New Barn Hummet, 1845, apparently quite wild. In a pasture by Afion house, *G. Kirkpatrick, Esq.* In Northwood park, apparently wild, *Miss G. Kilderbee!!!* I believe it does not flower in this last station, where it is too near the shrubbery to be above suspicion.

β.* Whole plant quite smooth and glabrous. Bulbs ovate, lying rather deep in the ground and increasing fast laterally, hence thickly clustered and cohering, covered with a pale brown epidermis, white internally and full of a clammy juice. Leaves all radical, not numerous (about 3 to 5 or 6), soon turning yellow and withered at the tips, very weak and flaccid, deeply channelled and almost involute, bluntish, grass-green, with a silvery white pellucid line along their upper side, strongly striato-costate beneath, and appearing powdered all over with minute lucid points or granules, variable in length and breadth, in the variety now described about equalling the flower-stem or rather shorter, very narrowly linear, and tapering to a thread-like tenuity at their junction with the bulb. Stem solitary, erect, terete, wavy, filled with loose cellular tissue, from a few inches to a foot in length, pale green above, white and gradually tapered below. Corymb terminal, lax, simple or only slightly compounded, of several divaricate, unequal, naked, single-flowered peduncles, the lower of which are curved upward or ascending, and rise to the level of the higher and much shorter ones. Bracts solitary at the base of the peduncles and somewhat clasping, linear-lanceolate, taper-pointed, membranous, soon becoming withered and scariose, much shorter than (at least the lower) the peduncles. Flowers large, above an inch in diameter, expanding for a short time only in the early part of the day and in fine weather, few, from 3 to 5 in the large bundle of specimens before me, sometimes much more numerous (5—20, *M. et K.*) Segments of the perianth elliptic-lanceolate, milk-white within and faintly striated, with a broad central stripe of pale green on the back; 3 inner segments somewhat smaller and narrower, bluntish; the 3 outer more oblong, subapiculate, with thickened glandulose tips. Stamens erect; filaments white, flat, simple, lanceolate, attenuated into subulate points, those opposite the inner segments of the perianth rather longer and considerably broader than the rest; anthers cream-coloured, erect, elliptical, bursting laterally, attached by the middle of their backs; pollen lemon-yellow. Germen large, obconic, yellowish green, shining and depressed at top, in 6 prominent, yellowish, blunt lobes. Style shorter than the stamens, 3-angled, 3-furrowed; stigma 3 glandulose decurrent lobes on the summit of the angles.

* [As the form β. only is described, we presume that all the stations given in the text refer to this variety.—Edrs.]

III. ALLIUM, Linn. Garlick.

"Perianth inferior, petaloid, of 6 ovate spreading pieces. Capsule triquetrous. — Flowers umbellate, arising from a 2-leaved spatha."—*Br. Fl.*

1. *A. vineale*, L. *Crow Garlick*. "Umbel globose bearing numerous bulbs, stem leafy below, leaves fistulose cylindrical slightly channelled above, spatha of one leaf short with long slender points, stamens exserted, 3 alternate ones deeply 3-cleft, middle points half as long as the lateral ones and as long as the entire part of the filaments."—*Br. Fl.* p. 440. *E. B. t.* 1974.

In meadows, pastures, waste grassy places, borders of fields, and on sandy banks and cliffs: not common, and seldom if ever flowering in this island. *Fl.* June, July. 24.

E. Med.—On Steephill and other parts of the Undercliff, occasionally. Frequent on the E. bank of the Medina, below Newport, near Fairlee house, *George Kirkpatrick, Esq. !!!* Culver cliffs, *Rev. G. E. Smith*.

? 2. *A. oleraceum*, L. *Streaked Field Garlick*. "Umbels lax bearing bulbs, stem leafy below, leaves linear grooved above semiterete or flat and ribbed beneath, stamens simple as long as or shorter than the perianth."—*Br. Fl.* p. 439. *E. B. t.* 488. *Fl. Dan.* ix. t. 1456.

E. Med.—On the débris of the green sandstone in Sandown bay, sparingly, where the *Rev. G. E. Smith* believed he had remarked it some years ago. Exceedingly abundant along the summit of the cliff above the same station, for perhaps a hundred yards or more, but never, I believe, flowering, though producing heads of bulbs at the extremity of the scape, as do the plants beneath (very doubtful if anything else than *A. vineale*).

3. *A. ursinum*, L. *Broad-leaved Garlick*. *Ramsons*. *Vect. Gipsy Onion*. "Umbel nearly plane, leaves ovato-lanceolate on footstalks, scape triangular."—*Br. Fl.* p. 440. *E. B. t.* 122.

In damp groves, copses, thickets, moist hollows, meadows, pastures, and on shady hedgebanks; far too abundantly in many places. *Fl.* April—June. 24.

E. Med.—In enormous quantity over nearly the whole of Greatwood copse, near Shanklin, and extremely abundant in all other woods betwixt Shanklin and Bonchurch, 1849. Plentiful in Centurion's copse, near Brading. Grounds at Norris castle, and in Barton copse, abundantly. Hatchet close and Cowpit-cliff copse. Abundantly in the great enclosed wood at Appuldurcombe park.

W. Med.—Copses between Idlecombe and Shorwell, abundant. About Shorwell, as at North Court, in the dell or hollow in which the Mausoleum stands, in patches of copse about Cheverton farm, &c., &c., abundantly, 1846. Most profusely in Lorden, Barkhams and Bakerwood copses, between Carisbrooke and Shorwell, perfectly concealing the ground, to the utter exclusion of every other plant, except the no less gregarious and usurping *Mercurialis perennis*. Very rank and abundant about Gatcomb under the trees in the wilderness or rookery, 1846. Common in Swainston woods, about Calbourne, and in fact in every patch of copse on the southern slope and foot of the central chalk range, in Westridge, Slucomb, Demcomb copses, &c., much too plentiful. Abundant in woods at Rowledge, 1844.

Bulb linear-oblong, white, emitting a bundle of stout cylindrical fibres; formed of the enlarged base of the inner leaf, and enveloped by the sheathing expansion of the outer one at the extremity of its footstalk, guarded besides by the bristle-

shaped remains or the partly entire and sheathing petiole of the previous year. *Leaves* 2, or more rarely 3, often accompanied by an additional bulb-bearing one at their side, lanceolate or elliptic-lanceolate, often above a foot in length by nearly 4 inches in breadth, bright green with a slightly glaucous tint, particularly on their paler under surface; many-ribbed, glabrous, acute, slightly attenuated towards the very long, roundish, semicylindrical or somewhat angular *petioles*, the exterior of which forms a common sheath to the inner leafstalk and flower-scape; this last, arising laterally from the base of the bulb, is smooth, solid, mostly about as tall as the leaves, from 10 to 20 inches high, in all my specimens acutely triangular nearly throughout, the two almost winged, the dorsal one flattened or becoming grooved towards the base of the scape, which still preserves its angularity; the semicylindrical shape ascribed to it by Smith being, as it would appear from the accounts of other authors, of unusual occurrence. *Umbel* not bulb-bearing, about $2\frac{1}{2}$ inches in diameter, bursting from a white membranous spathe of 2 ovato-lanceolate, acute, many-ribbed, deciduous leaves. *Flowers* numerous, milk-white, $\frac{3}{4}$ ths of an inch in diameter, on rounded scabrous pedicels of about the same length. *Segments* of the *perianth* lanceolate, acute, longer than the erect equal *stamens*; *filaments* white, all equal in breadth, and undivided or without teeth; *anthers* cream-coloured. *Capsule* green and succulent, tipped with the *style*, inversely heart-shaped, much depressed, deeply and very obtusely 3-lobed, the lobes subglobose. *Seeds* 2 (or more frequently by abortion), 1 in each cell, large, black and smooth, gibbous on the outer, plane on the inner side or that next to the almost obsolete septum of the valve, with a shallow notch at the acute interior angle of attachment.

Notwithstanding the nauseous odour of the Ramsons, which is so strong as to scent the air where the plant grows, as it too often does in our woods, to the exclusion of every other herb, and to the great annoyance of the passer-by who treads upon it, bees are attracted by the honied fluid at the base of the petals, and which is most likely free from the repulsive flavour of the herb itself.

Nearly allied to the present species is the *A. tricoccum* of N. America, but in that plant the leaves die off before the flowers are developed, which is not until June or July. The bulb, too, appears to be ovoid and acuminate, not, as in our species, elliptic-oblong, equally thick at each end. Both exhale the same detestable smell when drying for the herbarium.

IV. SCILLA, Linn. Squill.

"*Perianth* of 6 sepals, spreading and deciduous. *Filaments* filiform, glabrous, inserted on the base of the perianth.—*Flowers* blue or purple, racemose or corymbose, on a leafless scape without a spathe."—*Br. Fl.*

1. *S. autumnalis*, L. *Autumnal Squill*. Leaves several linear, raceme oblong subcorymbose few-flowered, pedicels erect in fruit without bracteas, bulb coated. *Sm. E. Fl.* ii. p. 146. *Br. Fl.* p. 441. *Lind. Syn.* p. 269. *E. B.* ii. t. 78. *Curt. Fl. Lond.* fasc. 6, t. 25 (optima). *S. fallax*, *Steinh. Bab. Fl. Sarn.* p. 94.

On short dry sandy or gravelly pasture-ground, and in grassy spots amongst rocks; rare. *Fl.* July—September. *Fr.* September. 24.

E. Med.—On the sandy turf of the spit below St. Helens, in great plenty. *Priory, Isle of Wight, Mr. J. Woods, jun., Bot. Guide.*

Bulb with a brownish loose cuticle, very large for so small a plant, from the size of a filbert to that of a nutmeg. *Scapes* 2—4 inches high, solitary or two or three from the same bulb, flowering in succession, solid, erect, angular and furrowed. *Leaves* few, extremely narrow and linear, channelled above, bluntish, deep green, seldom produced with the flowers, or at least not fully developed till the latter are past, and often not even then, usually shorter than the scapes and

recurved. *Flowers* few, in a short, oblong, subcorymbose cluster, scentless, pale blue, lilac or whitish, on pedicels about their own length, and which become much elongated and erect as the seed ripens; destitute of bractes at their base. *Segments* of the *perianth* ovate, bluntish, thickened and greenish at the back below the apex. *Filaments* decidedly enlarged downwards and much flattened, not thread-shaped, all equal; *anthers* dark red, in 2 distinct oblong lobes. *Stigma* 3-cornered. *Germen* 6-lobed, with 6 furrows, the intermediate ridges blue. *Capsules* on the lengthened pedicels, erect, obtusely trigonate, 3-celled, each cell exactly filled with the one or mostly two seeds it encloses, their valves strongly veined, widely dehiscing and glabrous. *Seeds* large, jet-black, transversely wrinkled, rounded at the back, the two inner faces concave, attached to the lower part of a deep dissepiment in the centre of each valve, which, gradually narrowing upwards, makes the capsule imperfectly 6-celled.

The different season of flowering, and absence of bractes to the pedicels, will readily distinguish this species from *S. verna*. Unlike that, the present is a southern plant, neither restricted to the sea-coast nor to the western side of the kingdom; Caernarvonshire seems to be its limit to the North, on the authority of Ray alone, and it has not yet been detected in Ireland.

Tribe III. *HEMEROCALLIDÆ*.

"*Leaves of the perianth combined below. Cells of the capsule few-seeded.*"—Bab. Man.

V. *AGRAPHIS*, Link. Hyacinth.

"*Perianth* 6-partite; *sepals* connivent below, and forming a campanulate tube, somewhat connected at the base, recurved at the extremity. *Stamens* 6, inserted below the middle of the *perianth*, on which the filaments are decurrent; alternate ones longer and somewhat exserted. *Capsule* obtusely 3-angled, 3-celled, 3-valved at the apex, few-seeded.—*Flowers racemose, with membranaceous bractes at the base of the pedicels.*"—Br. Fl.

1. *A. nutans*, Link. *Wild English Hyacinth* or *Blue-bell*. Vect. *Blue-bottles*. "Flowers in a raceme drooping, *sepals* revolute at the points, bractes in pairs, leaves linear."—Br. Fl. p. 437. Scilla, Sm.: E. B. t. 377. *Hyacinthus non-scriptus*, L.

Scilla verna, Huds. (Vernal Squill).—The following stations have been given for this plant:—Near Newport, *Pulteney*, Bot. Guide. Brading, Dr. Bostock in Withering, 7th ed. The authenticity of the latter quotation was kindly confirmed by Dr. Bostock, in answer to an inquiry made on the subject by my friend Dr. Bell-Salter in 1839.

Though the existence of *S. verna* as an Isle-of-Wight plant rests on such respectable authority, I feel inclined to refuse it admission into these pages, having never succeeded in finding it in either station, nor have any of my botanical friends been more fortunate than myself. Though common enough on most of our western and north-western shores from Cornwall to the Shetland Islands, it is rarely found on our eastern coasts, except towards the North, where, as at Dunstanborough Castle, in Northumberland, it has been discovered in abundance (London's Mag. of Nat. Hist. vi. p. 19). Hence it may naturally be expected to occur in this island, which is nearly on the meridian of that portion of the kingdom.

β. Flowers white.

In groves, thickets, copses, and on hedgebanks, as also in open grassy places, damp pastures and meadows; in the greatest abundance. *Fl.* April, May. *Fr.* July. 24.

β. In Quarr copse, St. John's wood, and elsewhere about Ryde, occasionally a plant or two here and there. Great-wood copse, and not unfrequent in other places near Shanklin.

Plant quite glabrous. *Bulb* lying deep in the ground, roundish ovoid or globose, white, with a pale yellowish external coat; filled with a copious clammy bland mucilage. *Leaves* several, shorter than the scape, from about 4 or 5 to 9 or 10 lines in breadth, at first erect, but during and after flowering spreading flat on the ground, or lax and drooping at their extremities, linear, bright green on both sides, smooth, shining and succulent, caniculate, bluntly keeled, obtuse and rounded or more or less pointed, but scarcely acute, thickened a little at the tips, tapering below into long, blanchied, semicylindrical, hollow, subterraneous bases. *Scape* erect, rounded, solid, brittle, full of a clammy juice, angular from the lowermost flower upwards. *Flowers* cernuous, in a terminal secund raceme from 3 or 4 to 6 or 8 inches long and nodding at the top; the lower ones remote, the higher crowded, varying in shade from a deep to a pale purplish blue, sometimes white or flesh-coloured. *Perianth* about $\frac{1}{4}$ ths of an inch long, including the revolute tips of the segments, campanulato-cylindrical or tubuloso-campanulate, a little ventricose at the base, to which it is divided into 6 linear, oblong, bluntyish segments, with a darker-coloured dorsal nerve, chaunelled, spreading and revolute at their tips, but more unequal in form, size and disposition than in any true Scilla or Hyacinthus, between which this species makes a transition in structure and habit. *Pedicels* rounded or subangulate, coloured, each with a basal pair of very unequal bracts, the larger of which, subtending the footstalk, is lanceolate and usually longer than the pedicel; the smaller linear, placed laterally and much shorter than the other; both coloured. *Stamens* unequal, the 3 alternate ones longest, about equal to the tubular part of the perianth; *filaments*,—the longer ones adnate with the segments for the greater part of their length, the shorter ones free nearly throughout; *anthers* yellowish or whitish, of two linear, parallel, erect lobes, bursting anteriorly. *Germen* ovoid, 6-lobed, without pores at the base, tapering into the coloured hexagonal style; *stigma* a 3-lobed tuft of crystalline points like bristles. *Capsule* erect, on the much elongated pedicels.

Order LXXVI. DIOSCOREACEÆ, R. Br.

"Diœcious. *Limb* of the *perianth* with 6 divisions. *Sterile flowers*:—*Stamens* 6 from the base of the perianth.—*Fertile flowers*:—*Ovary* 3-celled; *cells* 1—2 seeded. *Style* deeply trifid. *Stigmas* undivided. *Fruit* dry and flat, with 2 of its cells frequently abortive, or (in *Tamus*) baccate. *Embryo* small near the hilum, lying in a large cavity of cartilaginous albumen.—*Mostly* twining and tropical shrubs. *Leaves* with reticulated veins. *Flowers* small, bracteated."—Br. Fl.

I. TAMUS, Linn. Bryony.

Diœcious. *Stam. fls.*:—*Perianth* bell-shaped, 6-parted. *Stamens* 6. *Style* rudimentary.—*Pist. fls.*:—*Perianth* bell-shaped, contracted above the inferior and adnate ovary. *Stamens* 6, abortive. *Berry* (imperfectly) 3-celled. *Seeds* one or more in each cell, globose, without a border.

Perennial plants,* with twining herbaceous stems without tendrils, natives of Europe, North Africa and the Levant.

1. *T. communis*, L. *Black Bryony*. *Our Lady's Seal*. *Vect. Wild Vine*. *Murrain Berries*. Leaves undivided cordate acute. *Linn. Sp. Pl.* 1458. *Sm. E. Fl.* iv. 241. *Br. Fl.* 431. *Bab. Man.* 300. *E. B.* ii. t. 91.

In woods, thickets, groves, hedges, fences and bushy pastures; extremely common throughout the island. *Fl.* May—July. *Fr.* September, October. 24.

A very smooth glabrous vine, of universal occurrence with us, often seen twining, even around the stalks of corn and herbaceous plants, in open fields and pastures. *Root* very large and thick, consisting of an aggregate of irregular fusiform or digitate tubers, beset with wiry fibres; externally light brown or ash-gray and wrinkled, white, soft, fleshy and sterile within, and abounding with an acrid clammy juice. *Stems* annual, about the thickness of a quill, simple, purplish below, solid, slightly angular and twisted, climbing over hedges and bushes often to a great length, and twining, but without tendrils. *Leaves* alternate, very various in size and form, but all modifications of heart-shaped, the lower and middle sometimes as much as 5 or 6 inches long and 7 or 8 inches wide at base, those nearer the summit much smaller, more truly heart-shaped; mostly mucronato-acuminate, with long, abrupt, pale, very acute points; sometimes so suddenly tapering from above the base as almost to appear 3-lobed, at other times cordato-rotundate, with very short points, bright lucid green, often turning to a dark purple or violet, for the most part shining as if highly varnished, especially underneath, more rarely with little or no lustre; quite entire, but wavy along their margin, which gives them a somewhat crenate aspect, strongly 7- or 9-nerved, with numerous transverse anastomosing veins, firm and a little fleshy in texture, but becoming thin and membranaceous in drying; *petioles* very long, stiff and spreading, a little angular, inserted nearly at a right angle with the midrib of the leaf, swollen and fleshy at their base, where are situated a pair of small, fleshy, mostly reflexed stipules, that look like abortive tendrils. *Flowers* small, yellowish green, shortly pedicellate; *bract* subulate, solitary, or in pairs at the base or above the middle of each pedicel. *Staminate flowers* in clusters of 2 or 3 together, on long, lax, simple or slightly branched, naked racemes, the inferior of which usually much exceed in length the leaf, from the axil of which they spring. *Segments* of the perianth oblong, obtuse, a little recurved, with deflexed edges, the alternate ones tapering above the middle and somewhat pointed. *Stamens* erect, opposite the segments of the perianth, on a glandular nectariferous base, always surrounding very distinct rudimentary organs of the fertile plant; *filaments* thick, green and angular, their tips spreading; *anthers* roundish, 2-lobed, extrorse; *pollen* bright yellow. *Pistillate flowers* like the staminate, but smaller and paler, in far shorter racemes, never equalling the petioles in length. *Style* thick, deeply 3-cleft, each division terminating in a recurved bifid lobe. At the base of each segment of the perianth is a distinct rudimentary filament without the anther; hence this plant is less perfectly diœcious than many others, as in neither sex is the suppression of the organ of the other absolute and complete. *Berries* in short dense clusters, ovoid or subglobose, as large as sparrow's eggs, bright scarlet, shining and slightly pelucid when ripe, very succulent, 3-celled. *Seeds* 1, 2, or 3 in each cell, nearly globular, smooth and reddish.

* The genus *Tamus*, of which two species are known, is intimately allied in aspect and character to the curious Hottentot's Bread (*Testudinaria Elephantipes*), often met with in our conservatories; nor is the relationship less close in each of these particulars between our plant and *Rajania* and *Dioscorea*, the latter of which furnishes the valuable farinaceous Yam of tropical countries. *Tamus* also agrees with *Smilax* in habit and having baccate fruit, but differs in its inferior ovary and erect seeds.

This is assuredly one of the most elegant of British plants, with quite exotic and even tropical aspect, perfectly unlike any other native climber, and, though, in common with many a home production, neglected and despised on that account, is well worthy of general cultivation for the beauty of its ample, bright green and highly varnished, heart-shaped leaves, gracefully slender racemes of pretty but unassuming starry flowers, and festooned clusters of pellucid scarlet berries in autumn. When stretching to the summit of some tall bush or hedge, its leaves, from their imbricated arrangement and vertical position on the footstalks, seem as if gliding from above, and suggest the idea of a precipitously descending stream of foliage of the liveliest verdure.

The young shoots of Black Bryony are said to be a good substitute for Asparagus, which they look very like on their first appearance above ground in the spring, the two plants being in fact pretty closely allied in botanical character. The root might possibly be rendered esculent, like the Yam (*Dioscorea sativa*), by cultivation, and dissipation of the acrimony by roasting, &c. The berries have scarcely any taste, and leave a very slight impression only of acrimony in the mouth and fauces, yet if much handled, or the fresh juice be applied to the face, the back of the hand or other sensible part of the skin, it almost immediately causes a very troublesome tingling and itching, which lasts some time, and is followed by a slight redness or minute pustular eruption on the cuticle: this singular action explains the efficacy of the berries, when steeped in gin, as a popular remedy for chilblains in this island, where the power they possess, in common with the root, of removing superficial discolorations of the surface from bruises, sunburns, &c., is equally well known and applied in practice.

My friend Lady Erskine informs me that the Black Bryony is called in Wales 'Serpent's Meat,' and that an idea is there prevalent that those reptiles are always lurking near the spots where the plant grows. 'Afal Adda' is one of its Welsh names.

Order LXXVII. SMILACEÆ.

"*Perianth* inferior, petaloid, 6-parted. *Stamens* 6 (or 4—8), inserted into the receptacle or on the perianth; *anthers* bursting inwards. *Ovary* superior, 3-celled; *ovules* 1 or many in each cell. *Styles* 1—3. *Fruit* succulent, not bursting."—Asparagææ.—*Bab. Man.*

I. ASPARAGUS, Linn. Asparagus.

"*Flowers* perfect or occasionally imperfect, jointed with the pedicel. *Perianth* campanulate, tubular at the base, 6-partite, deciduous. *Stamens* 6, distinct. *Anthers* peltate. *Ovary* 3-celled, with 2 *ovules* in each cell. *Stigmas* 3, reflexed. *Berry* globose, 3-celled."—*Br. Fl.*

1. *A. officinalis*, L. *Common Asparagus*. *Vulg. Speerage Sparrow-grass*. Unarmed, stem herbaceous mostly erect rounded much branched, leaves fasciculate setaceous flexible, peduncles jointed in the middle. *Sm. E. Fl.* ii. p. 153. *Br. Fl.* p. 434. *Lind. Syn.* p. 267. *E. B. v. t.* 339. *Curt. Br. Entom.* xvi. t. et fol. 740.

In sandy or stony places by the sea-shore; very rare. *Fl.* June—August. 24. *E. Med.*—A single plant on the shore at the mouth of the Wootton river, 1842. A very few plants on the shingly beach betwixt Ryde and Binstead, probably

introduced there by accident. A few plants on the shore West of the houses at Ryde, *Wm. Wilson Saunders, Esq.*

W. Med.—Norton spit, *Mr. W. D. Snooke*; but sparingly!!! Freshwater, *Pulteney, Bot. Guide.*

Herb quite smooth. *Root* long, white, running deeply down in the loose sand or shingle. *Stems* several, 1—2 feet high,* usually erect, green, striated, bluntly angular, much branched, the branches alternate, slender and upright, with an acute, brownish and ribbed stipule at the origin of each ramification. *Leaves* in small bundles of about 5 to 12, erect, setaceous, fleshy and pointed, weak and flexible, with a small foliaceous stipule at the base of each fascicle (sometimes accompanied by 2 minute interior ones, *Sm.*) *Flowers* drooping, yellowish green with a tinge of reddish brown, not $\frac{1}{2}$ an inch long, in pairs from the opposite sides of the secondary branches at their junction with the main ones, and are therefore not truly axillary. *Pedicels* spreading, curved downwards, with an annular joint in the middle, from thence thickened upwards into the perianth, of which it looks like a production, the leafy appendage at the base of the branches serving as a common bractea to both flower-stalks. *Perianth* bell-shaped, somewhat contracted about the middle, its segments oblong-obtuse, a little spreading or reflexed at the tips. *Stamens* inserted at the base of each segment, short, connivent from the bending of the filaments at an acute angle in their upper half, their lower being adnate with the perianth; *anthers* large, 2-celled, somewhat awned, bursting on their inner surface; *pollen* orange-coloured. *Germen* somewhat turbinate, seated on a nectariferous base. *Style* 3-sided, almost as long as the perianth, with 3 long recurved stigmas," (*M. et K.*): these organs in my specimens were manifestly imperfect, the style being obsolete, and the stigma reduced to three scarcely visible points.

The scaly shoots afford under cultivation a well-known delicacy of our tables.

II. *RUSCUS*, *Linn.* Butcher's-broom.

"Dioecious. *Perianth* spreading, of 6 sepals. *Filaments* combined in a tube.—*Barren flowers*:—*Anthers* 3—6, reniform, placed on the summit of the *stamen-tube*.—*Fertile flowers*:—*Anthers* 0. *Style* 1, surrounded by the tube of the sterile stamens. *Stigma* capitate. *Ovary* 3-celled; *ovules* 2 collateral in each cell. *Berry* usually 1-seeded."—*Br. Fl.*

Rigid, suffruticose, evergreen plants, with compressed shoots or branchlets (phyllodia) in place of true leaves, which they much resemble, bearing flowers on their upper or under side or along their margin. The few species known are found in Europe, North Africa or Western Asia; none in America.

1. *R. aculeatus*, *L.* *Common Butcher's-broom.* *Knee Holm* or *Knee Holly.* *Shepherd's Myrtle.* Stems erect branched very rigid, phyllodia elliptical-ovate mucronate aculeate with pungent acerose points floriferous on their upper side towards the base, flowers subsolitary bracteate subtended by a minute winged deciduous spine, berry globose. *Sm. E. Fl.* iv. 235. *Br. Fl.* p. 434. *Bab. Man.* 302. *E. B.* viii. t. 560.

* The authors of the 'Deutschland's Flora' found a wild specimen of *A. officinalis* on the sea-coast, 12 or 14 feet high and $1\frac{1}{2}$ inch in diameter. They further remark that the German species is (partially) dioecious and polygamous (dielinisch—polygamisch). In the few specimens I have examined here the style appears imperfectly developed, nor have I ever seen berries produced with us in the wild state.

In woods, copses and bushy heathy places, on hedgebanks, by roadsides and borders of fields, chiefly in the North and North-east of the island; very frequent. Fl. spring and autumn. 24.

E. Med.—Very common about Ryde, in Quarr copse, Apley wood, Shore copse, wood between Ninham farm and the Newport road, and on bushy banks by the Wootton river above Kite hill. Woods along the river below Wootton bridge, 1843, especially in that upon the eastern bank, near Ash-lodge farm, in which it abounds, but of stunted growth. Not unfrequent all about that neighbourhood, as in the road from Fishbourne leading to the Newport road, in two places, 1849. On Ashley common, sparingly, 1849. Alverstton lynch. About Newchurch, profusely in Hill copse and on Skinner's hill. On Hill heath, at the North end, are some very large large patches.

W. Med.—Very abundant in Gurnard wood, near W. Cowes.

An extremely tough, rigid, bushy plant, having somewhat the aspect of a myrtle, often growing in dense clumps or large patches in open grassy places by roadsides. Root perennial, of many hard almost woody knots or tubers, emitting copious long, thick, pale, simple or branched fibres. Stems several, biennial, 1—3 feet in height, bluntly angular above, simple and rounded below, finely striated, solid, dark green, with many simple or slightly compound, opposite, alternate or scattered branches. Phyllodia elliptical-ovate, dark green, variable in breadth, about an inch long, quite entire, with several obscure converging ribs, terminating in a very pungent whitish or brownish spine, the upper surface of each phyllodium averted from the stem, or in a somewhat prone position from the twisting of the very short footstalk. Flowers minute, solitary or sometimes two in the concave and reversed upper side of each phyllodium, and from which they seem to spring. * Perianth in 6 greenish divisions, of which the three outer are ovate, with inflexed points; the three inner linear-lanceolate, tinged with violet, their margins revolute; occupying the place of petals, to which name they appear as much entitled as in any flower with a double perianth. Anthers 3, 2-lobed, quite sessile on the summit of the hollow bluntly angular nectary, closely united together or coalescing, so that their form and number are with difficulty seen in the full-blown flower, but easily shown to be three in the dissected bud. There is a rudimentary germen in all the male flowers I have hitherto examined. Pistillate flowers similar to the staminate, but without anthers. Ovary enclosed within the violet-coloured fleshy nectary. Stigma peltate, somewhat 3-lobed, just protruding beyond the tubular nectary and covered with a viscid juice. Berries globose or subdepressed, bright coral-red, about the size of a small cherry, filled with a yellowish, mealy, not ill-tasting pulp. Seed mostly by abortion solitary or geminate, large, whitish, spherical, or, when two are present, flattened on their inner side, somewhat translucent, with a tough horny albumen.

The flowers of the Butcher's-broom are often produced as early as January if the weather be tolerably mild, and the berries remain hanging through the winter. Butchers are said to make use of it in some parts of England for driving away, and perchance impaling with its sharp spines, the flies that settle on their

* They are however in fact axillary, on peduncles several times their own length, running beneath the epidermis of the phyllodium to their origin in the main stem. Analogy with other species of the genus would lead us to consider this subcuticular peduncle as the common stalk of a raceme, of which only one flower is developed at a time at its free extremity, the rest expanding as they are successively protruded, as is plain from their production for a long time together from the same point, as well as from the remains of the pedicels and bracts, not to mention the nascent buds, amongst which the later flowers are seated. Each flower has an irregular membranous bract beneath it; and springing from the phyllodium itself, just at the point of emergence of the flower-stalk, is a small, scariously winged, deciduous spine or bristle, answering to the leafy appendage found in some nearly allied species, but so readily falling away as to be not always perceptible.

meat and chopping-blocks. The more gentle of the craft with us are content to deck their mighty Christmas sirloins with the berry-bearing twigs, and it contributes at that festive season, with other evergreens, to the decoration of our churches and dwellings. Though common in England, particularly in the South, it is rare in Scotland, and has not been hitherto discovered in Ireland.

Though a native of very temperate parts of Europe only, Pallas (*Fl. Brastica*) asserts that it bears the winters of St. Petersburg, which it is enabled probably to do solely when defended by the copious covering of snow which regularly covers the earth in that high latitude from the severe frosts of the climate, since the same plant requires some degree of shelter in the open ground even at Berlin.

Order LXXVIII. JUNCACEÆ, *Juss.*

"*Perianth* 6-partite, subglumaceous (usually scarious, sometimes herbaceous and coloured internally, but at length dry and hard), persistent. *Stamens* 6, inserted into the base of the segments, or sometimes 3, and then opposite the outer segments. *Ovary* free, imperfectly 3-celled and many-ovuled, or 1-celled and 3-ovuled. *Style* 1. *Stigmas* usually 3, sometimes 1. *Fruit* capsular, with 3 valves, bearing the dissepiment in the middle, rarely closed and by abortion 1-seeded. *Embryo* minute, cylindrical, at the base of a hard fleshy or cartilaginous *albumen*.—Herbs. Leaves *grassy or subulate, with parallel nerves or veins, sometimes wanting*."—*Br. Fl.*

I. NARTHECIUM, *Huds.* Bog Asphodel.

"*Perianth* petaloid, of 6 linear-lanceolate, spreading, at length connivent, sepals. *Stamens* woolly. *Germen* pyramidal. *Stigma* entire. *Capsule* 3-celled, at the base 3-valved. *Seeds* numerous, with an appendage at each extremity."—*Br. Fl.*

1. *N. ossifragum*, *Huds.* *Lancashire Bog Asphodel.* Leaves linear uniform equitant, pedicels bracteated above the middle, stamens woolly much shorter than the perianth. *Sm. E. Fl.* ii. p. 151. *Br. Fl.* p. 455. *Lind. Syn.* p. 277. *E. B.* viii. t. 535. *Hook and Graves, Fl. Lond.* iv.

In spongy or peaty bogs, wet moory heaths and commons; not very frequent. *Fl.* July, August. 24.

E. Med.—Moors by Munsley, near Godshill. Munsley peat-bed, 1849. On the boggy slope of Bleak down, towards Roude, 1843. Most profusely in Alverstton lynch, 1841. Bogs on the Wilderness. On the marshy skirts of Lake common, in several places plentifully. Bog at Blackpan, *Dr. Bell-Salter*, 1844.

W. Med.—Wood near Tinker's lane, *Miss G. Kilderbee*. Freshwater beach, Isle of Wight, *Rev. Messrs. Garnier and Poulter* in Hamps. Repos.

Rhizom creeping, white and jointed, emitting copious entangled capillary fibres,

[Order LXXVII b. MELANTHACEÆ, *R. Brown.*]

Colchicum autumnale, L., was found by Mr. Daniel Clarke, of Newport, in a field by the Medina above Shide bridge, some years ago, according to Mr. G. Kirkpatrick, but subsequent research has not confirmed the discovery.

constituting a spongy cæspitose mass of great density. *Stem* ascending at the base, 6 or 8 to 15 inches high, rounded, glabrous, striated, hollow in the centre. *Radical leaves* and those of the barren shoots bright green, fascicled, equitant on one another by their white sheathing lower portions, which appear as if slit along one of their edges for a considerable distance upwards, linear-ensiform, many-ribbed, slightly convex on one side, concave on the other, their points a little oblique, unequal in length, sometimes as tall as the stem, but usually much shorter; *stem-leaves* alternate, distant, membranaceous, very short, especially the upper, strongly ribbed, inflated, sheathing below, keeled and folded together towards their points, which are in general closely applied to the stem. *Flowers* in a terminal, erect, racemose cluster, 2 or 3 inches in length, bright yellow, with scarlet anthers, about $\frac{1}{2}$ an inch in diameter, on rather long upright *pedicels*, having 2 linear-lanceolate coloured *bracts*, one at the base and half-sheathing, the second smaller and placed about the middle of the flower-stalk or a little above it. *Segments of the perianth* linear-lanceolate, equal, greenish at the back, their tips reddish. *Stamens* erect, shorter than the perianth, often remaining attached in seed; *filaments* thickly clothed with long, spreading, bright yellow hairs; *anthers* oblong, erect, deep orange, with scarlet pollen, 2-celled, bursting laterally. *Germen* ovate, 3-lobed, each lobe with a central furrow. *Style* none, unless the tapering summit of the ovary be considered as such; *stigma* minute, simple. *Capsules* brick-red,* glabrous, linear-oblong, taper-pointed, much longer than the calyx, bluntly trigonous, 3-valved, with a deep furrow along the back of each valve, corresponding to the thin central partitions formed by the reduplication of the margins of the valves, and which are united below by the oblong spongy receptacle at the base of each dissepiment, whose upper margins are free. *Seeds* numerous, erect, fusiform, remarkably attenuated towards each extremity, covered with a membranous, pale, translucent, lax and twisted tunic.

II. JUNCUS, Linn. Rush.

"*Perianth* of 6 leaves, glumaceous. *Filaments* glabrous. *Stigmas* 3. *Capsule* 3-celled, 3-valved; *valves* with the seed-bearing *dissepiments* in their middle. *Seeds* numerous. — (Leaves rigid, mostly rounded, rarely plane, glabrous)." — *Br. Fl.*

* *Leaves* none. *Barren scapes* resembling leaves. *Panicle* terminal. *Flower-clusters* aggregated.

1. *J. maritimus*, Sm. *Lesser Sharp Sea Rush*. "Barren scapes and outer bractæ pungent, panicle compound erect, clusters 4—8 flowered, sepals equal lanceolate acute as long as the elliptical mucronated capsule." — *Br. Fl.* p. 448. *E. B. t.* 1725. *Fl. Danica*, x. t. 1689. *Host. Gram. Aust.* iii. 54, t. 80. *J. acutus* β., L.

About salt-marsh ditches, and on flat muddy shores at the mouth of tide-rivers, creeks and inlets of the sea; abundantly. *Fl.* July, August. 24.

E. Med. — On ditchbanks along the coast between Springfield and Nettlestone point. Brading harbour, in abundance, *Mr. Snooke*.

W. Med. — Plentifully by creeks of the Medina above W. Cowes, and in salt-marshes at Newtown. Profusely in the salt-marshes along the Yar between Yarmouth and Freshwater church, &c. Thorness bay, in plenty. Norton, *Mr. Snooke*.

Root creeping horizontally with stout fibres, reddish, tough and woody, emitting numerous rigid barren and flowering scapes 2—4 feet high, round or a little compressed, dark olive-green, smooth and shining, filled with a soft white pith.

* The capsules of this and *N. americanum* lose their red colour by keeping, and become whitish.

Sheaths short, torn at the summit, dark brown or red, loosely investing the white bases of the scape, which are very clammy, and possess a peculiar fragrance, resembling that of cedar-wood, not, I believe, noticed by any author. *Barren scapes* mostly shorter than the *fertile*, their points brown, with a white tip and very sharp. *Panicle* terminal, of several principal, erect, compressed branches, rising one above another in a proliferous arrangement, and divided at their summits into shorter and still compounded ones, bearing the clusters, with several acute whitish *bracts* beneath each bifurcation; the general bract like a continuation of the scape, but with a distinct articulation at its closely sheathing base; in length about equal to the panicle. *Flowers* in clusters of 3—8,* greenish, included in a pair or more of pale chaffy bracts. *Segments* of the *perianth* equal, lanceolate, greenish at the back, with streaks of reddish brown, their tips and edges white and membranous, especially of the *three inner ones*, which are often much dilated. *Anthers* pale yellow. *Germen* pear-shaped, and as well as the *style* red; *stigmas* twisted in a close compact spiral, and fringed with long crystalline points. *Capsule* small, yellowish, acute, with a blackish tip, in all my specimens a little exceeding the perianth in length. *Seeds* numerous, pale yellow, obovato-oblong, covered with a wrinkled slightly woolly tunic, few only perfected.

The long, white, woolly hairs on the seeds of this plant is a very singular character of the species: do they exist on *J. acutus* also?

** *Leaves none. Barren scapes resembling leaves. Panicle lateral.*

2. *J. effusus*, L. *Soft Rush*. "Scapes very faintly striated soft, 'pith continuous,' panicle branched, sepals spreading lanceolate nearly equal acuminate rather longer than the obovate retuse not apiculate capsule."—*Br. Fl.* p. 446. *E. B.* t. 836. *Host. Gram. Aust.* iii. 55, t. 83.

In poor wet pastures, on moist heaths and commons, &c.; abundant. *Fl.* July. 24.

3. *J. conglomeratus*, L. *Common Rush*. "Scapes very faintly striated soft, 'pith continuous,' panicle branched, sepals lanceolate acute nearly equal about as long as the obovate retuse apiculate capsules, stamens 3."—*Br. Fl.* p. 447. *E. B.* t. 835. *Host. Gram. Aust.* iii. 55, t. 82.

α. "Panicle dense globose."—*Br. Fl.*

β. "Panicle more or less diffuse."—*Br. Fl.*

In wet barren pastures, by roadsides, &c.; everywhere. *Fl.* June, July. *Fr.* July. 24.

β. Not uncommon.

Besides the much darker colour of the capsules in the present species, they appear to ripen considerably before those of *J. effusus*.

4. *J. diffusus*, Hoppe. *Loose-flowered Rush*. "Scapes finely striated rigid, 'pith continuous' (or interrupted), panicle loose much branched erect, sepals lanceolate subulate longer than the obovate obtuse mucronate capsule, stamens 6."—*Br. Fl.* p. 447. *Hoppe in Sturm's Deutsch. Flora*, 77, 10.

In similar situations with the following, and, in the few stations in which I have

* The clusters, properly speaking, are seldom composed of three or four clusters included within the same pair of bracts, but two or more such clusters are so closely aggregated that they may perhaps be fairly considered as forming only one.

yet observed this plant, associated with it and *J. conglomeratus*, appearing to myself to be a hybrid between these two rushes; rare? *Fl.* July, August. 24.

W. Med.—On the S. side of Parkhurst forest, about Hedge Corner, observed there by *Mr. Borrer* in 1847. It grows by the side of the road (Newport and Yarmouth), associated with *J. glaucus*, *J. effusus* and *J. conglomeratus*, 1848.

I must own to experiencing a degree of difficulty in at all times distinguishing this plant from *J. glaucus* and *J. effusus*, at first sight at least. Excepting when in fruit, its resemblance to some of the greener stemmed states of *J. glaucus* renders its detection less easy.

5. *J. glaucus*, Sibth. *Hard Rush*. Stems leafless deeply and finely sulcato-striate rigid, pith (always?) interrupted, panicle loose compound erect, segments of the perianth subulate lanceolate nearly equal about the length of the elliptical-oblong mucronate capsule. *E. B. t.* 665. *Br. Fl.* p. 447. *Host. Gram. Aust.* iii. 54, t. 81.

In poor wet sandy or heathy pastures, moist waste ground, by roadsides, and on commons; frequent. *Fl.* July. *Fr.* September. 24.

E. Med.—Plentiful in the meadow within the walls of Quarr abbey. At Springfield. Niton, in a meadow below Little Buddle farm, in great plenty. Plentiful near Asheys farm, along the Ryde road.

W. Med.—Abundant along the S. side of Parkhurst forest, as near Hedge Corner, in company with *J. effusus*, *J. diffusus* and *J. conglomeratus*. Abundant by the shore just beyond Norton, on the way to Colwell.

Root moderately creeping, tough and woody, yellowish within, emitting many palish downy fibres. *Stems* densely tufted, about 2 feet high, more slender (?) than in *J. effusus*, terete, hard, tough and rigid, erect or somewhat arcuate at the summit when in seed, finely and deeply sulcato-striate, with a distinct glaucous hue of variable intensity, filled with a white slender pith, which is continuous or nearly so at the base, but interrupted by numerous cells for the remainder of its length; sheathed at bottom with deep brown or purplish black highly polished scales, and continued for several inches beyond the panicle to a very gradually tapering rigid point. *Panicle* lateral, diffuse, decomposed (but less so than in *J. effusus*?), the branches longer, (?) erect. *Capsules* reddish brown or blackish, polished, elliptic-oblong, obtuse or acute, mucronate, bluntly trigonate, about the length of the erect perianth-segments, occasionally a little longer or shorter than these. *Seeds* numerous, yellowish brown and pellucid, roundish oblong or conical, very obtuse, blackish at the smaller end, which is crested with a prolongation of the close, wrinkled, truncate testa.

*** *Stems leafy*. *Leaves rounded or subcompressed, and distinctly jointed internally*. *Panicle terminal*. *Flowers aggregated or fascicled*.

6. *J. acutiflorus*, Ehrh. *Sharp-flowered Jointed Rush*. "Stem and leaves subcompressed, panicle very compound pyramidal, clusters 5—6 flowered, leaflets of the perianth unequal lanceolate very acute nearly as long as the narrow-ovate subacuminate (pale brown) capsule."—*Br. Fl.* p. 449. *E. B. t.* 2143. *J. articulatus*, *E. B. t.* 238. *J. adscendens*, *Host. Gram. Aust.* iii. 58, t. 87.

On boggy heaths and in wet clayey ground; frequent. *Fl.* June—August. 24.

7. *J. lamprocarpus*, Ehrh. *Shining-fruited Jointed Rush*. "Stem ascending and as well as the leaves compressed, panicle repeatedly compound erect or somewhat spreading, clusters 4—6 or 8-flowered, sepals equal the ends obtuse shorter than the acute

triquetrous oblong-lanceolate (dark brown) capsule, interior 3 obtuse."—*Br. Fl.* p. 449. *E. B.* t. 2143.

In similar places with the preceding, and equally common. *Fl.* July, August. 24.

By the roadside a little before entering Whitefield wood from Ryde.

8. *J. supinus*, Mœnch. *Lesser Bog Jointed Rush*. "Stem erect and often swollen at the base or decumbent and rooting, leaves bristle-shaped slightly grooved faintly jointed internally, panicle nearly simple irregular, clusters few- or many-flowered, sepals equal oblong nearly as long as the elliptical very obtuse mucronate (pale brown) capsule, outer 3 acute, inner ones rather obtuse."—*Br. Fl.* *J. uliginosus*, Willd.: *Br. Fl.* p. 449. *E. B.* t. 801.

β. Stems procumbent or floating and proliferous. *J. subverticillatus*, Wulf.: *Sm. E. Fl.* ii. p. 170. *Host. Gram. Aust.* iii. 58, t. 88.

In boggy watery places, on wet sandy heaths and commons. *Fl.* June—August. 24.

β. Parkhurst forest.

9. *J. obtusiflorus*, Ehrh. *Blunt-flowered Jointed Rush*. Stem and leaves erect rounded jointed internally, panicle repeatedly compound, the branches divaricate and reflexed, clusters 3—8 flowered, segments of the perianth nearly equal rather obtuse about as long as the ovate trigonous capsule. *Sm. E. Fl.* ii. p. 176. *Br. Fl.* p. 449. *Lind. Syn.* p. 276. *E. B.* xxx. t. 2144. *Fl. Dan.* xi. t. 1872 (bona).

In ditches, boggy or marshy meadows and pastures, growing even in the water; abundant along the coast in West Medina, scarcely found in the eastern hundred. *Fl.* August, September. 24.

E. Med.—On wet slipped land near the Sandrock spring, abundantly, and in various places between Niton and Blackgang. Plentiful in the Undercliff, at Blackgang, and in Sandown bay, *Rev. G. E. Smith*.

W. Med.—Ditches in the marsh at Freshwater gate, plentifully, and where one or two of the low boggy meadows are overrun with it. Near the shore just beyond Norton, towards the preventive-station, sparingly. Wet banks of slipped land in Colwell bay. Between the Needles (Groves's) hotel and Alum bay.

Root creeping, whitish and jointed, emitting several fertile and barren scapes, from 18 inches to 3 or 4 feet high, olive-green, round, smooth, polished, scarcely striated, nearly solid below, hollow and jointed internally above, each with a close-fitting pale brown or whitish sheath at the base, which is rounded at the apex, and furnished with an awn or point about $\frac{1}{4}$ th of an inch long. *Barren scapes* leafless, or, like the fertile, having one or two leaves resembling the scape itself, but softer and less rigid, closely sheathing the latter in its lower part, and auricled where they separate from it; when two leaves are present on the same scape the upper one is usually short and near the summit, the other very long and set about midway on the scape. *Panicle* terminal, oblong, diffuse, its branches compressed, repeatedly compound, their minor divisions widely spreading, divaricate, bent down at a right angle, subtended by a pointed bract various in length. *Flowers* small, pale whitish green or reddish, in clusters of from 2 to 6 or 8 together. *Segments* of the perianth nearly equal, concave, a little rounded or obtuse at their white membranous tips. *Germen* green. *Stigmas* mostly twisted in a loose spiral. *Capsules* very small, chestnut-brown, shining and striated, more or less obtuse or pointed; with 3 thick prominent angles; as long as or often a little exceeding the perianth. *Seeds* several, very minute, pale brown, oblong, pointed, beautifully ribbed longitudinally, with connecting reticulations, and without a tunic.

**** *Leaves all radical (or nearly so). Panicle terminal.*

10. *J. squarrosus*, L. *Heath Rush. Goose Corn.* "Leaves setaceous rigid grooved, panicle terminal elongated compound, capsules elliptical-ovate very obtuse about as long as or scarcely shorter than the calyx."—*Br. Fl.* p. 452. *E. B.* t. 933.

On moist, barren, sandy pastures, boggy moors and heaths, but not general. *Fl.* June, July. *Fr.* July. 4.

E. Med.—In moist pastures immediately below the Wilderness, 1844. On several parts of Bleak down, abundantly. Pastures about Rookley farm.

W. Med.—[At Blackgang, above the chine, *Dr. Bell-Salter*, Edrs.]

Plant extremely rigid, smooth and shining, growing for the most part in round tufts, and conspicuous from the bright green of its short, very stiff and narrow leaves. *Root* densely tufted and creeping with stout, short, and in my specimens mostly downy fibres. *Stems* erect, from about 6—12 inches, rounded or sometimes much compressed, furrowed or obscurely angular, not jointed, invested at the base with one or two leaves with close sheaths, which however, like the rest, are really from the root-crown; there is, however, though rarely, a true cauline leaf about the middle of the stem. *Leaves* almost entirely radical, singularly stiff and wiry, fascicled and forming dense, circular, radiating tufts, usually about half as long as the stem, spreading or partly erect, more or less recurved, bright green, linear, semiterete or rather deeply depresso-canaliculate, acute, with blackish tips and reddish white, striated and shining bases. *Panicle* terminal, elongated, but little compounded, of two principal, erect, very unequal branches, with a common sheathing, reddish brown, taper-pointed, often leafy bract at their base, besides an inner obtuse or bifid and smaller one opposite to and concealed by the former; the branch continued directly from the stem, usually much longer than the oblique or lateral and more compounded one, the bracteal arrangement repeated at each bifurcation, but the upper bracts are similar to the floral, and without leafy points. *Flowers* rather large, appearing clustered, with a pair of close ovate scarious bracts under each, and a third immediately below these at the origin of the very short pedicels. *Segments* of the perianth nearly equal, lanceolate, not very acute, concave, dark livid brown, with broad, grayish, membranous edges. *Stamens* much shorter than the perianth. *Capsule* about 2 lines in length, pale brownish or grayish, smooth and shining, scarcely quite equalling the calyx, ovoid-elliptical, very obtuse, tipped with the base of the style. *Seeds* very small and numerous, dark brown, of an irregular prismatic shape, oblong or subreniform, rounded or somewhat angular and pointed at one end, gibbous at the back, closely and finely punctato-striate, covered apparently, when viewed under a high magnifier, with a thick transparent pellicle.

**** *Stems leafy. Leaves plane or grooved above, not distinctly jointed.*

11. *J. compressus*, Jacq. *Round-fruited Rush.* "Stem erect more or less compressed, leaves linear-setaceous grooved, panicle terminal compound subcymose, capsules roundish-ovate or oval mucronate equal to or longer than the oval-oblong obtuse incurved sepals."—*Br. Fl.*

α. "Panicle usually shorter than the bractea, perianth shorter than the roundish-ovate shortly mucronate capsule."—*Br. Fl.* *J. bulbosus*, *E. B.* t. 934. *Host. Gram. Aust.* iii. 59, t. 89.

β. "Panicle simple few-flowered longer than the bracts."—*Br. Fl.* *J. cænosus*, *Bich. Tr. of Linn. Soc.* xii. p. 309. *E. B. Suppl.* i. t. 2680. [*J. Gerardi-Lois: Bromf. in Phytol.* iii. p. 979.—*Edrs.*]

In wet marshy places. *Fl.* June—August. 4.

E. Med.—Plentiful at the mouth of the Wootton river. St. Helen's spit.

W. Med.—On the beach a little way out of Yarmouth eastward, and abundant in the first meadow, or that nearest the sea, at Freshwater gate.

β . On muddy or sandy shores of the sea and of tide-rivers, and in salt-marsh pastures; frequent. [From our author's published notes in the 'Phytologist,' we believe the above stations refer mainly to the var. β ., which is there enumerated under the name of *J. Gerardi*, but the author adds, "and which I am disposed to regard as a salt-marsh variety of *J. compressus*."—*Edrs.*]

12. *J. bufonius*, L. *Toad Rush*. "Stem dichotomous above paniced, leaves filiform setaceous grooved, flowers solitary unilateral mostly sessile, capsules oblong obtuse much shorter than the very acuminate leaflets of the perianth."—*Br. Fl.* p. 451. *E. B.* t. 802. *Host. Gram. Aust.* iii. 60, t. 90.

In damp sandy or gravelly spots where water has stood, by roadsides, the margins of ponds, and other wet places; abundantly. *Fl.* August. *Fr.* September? October. ☉.

Capsules elliptical-oblong, bluntly triquetrous, very obtuse at top, yellowish brown and yellowish, shining and minutely punctulato-striate, submucronate, usually much shorter than the very acuminate and erect perianth-segments. *Seeds* very numerous and minute, pale brown and pellucid, mostly roundish ovoid or a little oblong, finely and rugosely striated longitudinally, without a tunic, tipped at each end with a brownish point.

III. *LUZULA*, DeCand. Wood-rush.

"*Perianth* of 6 leaves, glumaceous. *Filaments* glabrous. *Stigmas* 3. *Capsule* 1-celled, 3-valved; *valves* without dissepiments. *Seeds* 3, at the bottom of the capsule. (Leaves soft, plane, generally hairy)."—*Br. Fl.*

Perennial herbs, closely allied to the last genus in their inflorescence, but with flat, grass-like, filamentose leaves, and flowering for the most part much earlier. Natives of all parts of the globe, in woods or on high mountains, more rarely in open pastures.

* *Panicle* decomposed. *Flowers* solitary or few together on the spreading or deflexed peduncles.

1. *L. sylvatica*, Birch. *Great Wood-rush*. "Leaves hairy, panicle subcymose doubly compound, peduncles elongated of about 3 fascicled flowers, leaflets of the perianth aristate as long as the ovate mucronate capsule, seed minutely tubercled at the end, filaments very short."—*Br. Fl.* p. 453. *L. maxima*, DC. *Juncus sylvaticus*, Huds.: *E. B.* t. 737. *J. pilosus* δ , *L.* *J. maximus*, Willd.: *Host. Gram. Aust.* iii. 65, t. 98.

In woods, groves and heathy ground, amongst bushes, mostly in hilly situations, but not general. *Fl.* April—June. *Fr.* June. 24.

E. Med.—Woods about Shanklin and Cook's castle, as in Cowpit-cliff wood, Hungerberry copse, Apse farm, &c. Abundant on a dry bushy bank at Apse castle, above the little stream that skirts the hill on the N.W. side. In the Parsonage lynch, Newchurch, also in another wood near that place, plentifully, 1837. Little Standen wood, near Newport, abundant.

The largest and handsomest of the British *Luzulæ*, growing in dense tufts. *Root* thick, creeping, fibrous, throwing up leafy bunches. *Stems* erect, 1—2 feet high, round, leafy, smooth and striated. *Leaves* numerous, tufted, sheathing, bright green, smooth and shining, taper-pointed, $\frac{1}{2}$ an inch or more broad at the base, concave, quite entire along their edges, which are thinly fringed with long,

white, silky hairs. *Flowers* clustered, 2 or 3 together, in a large, terminal, compound, diffuse or spreading panicle, their peduncles in part strongly deflexed, with an acute, sheathing, membranous, ribbed and hairy bract at the base of each. *Segments* of the perianth ovato-lanceolate, thin, brownish at the edges, with a greenish midrib, and terminating in a small point or mucro. *Stamens* about as long as the perianth; *anthers* large, pale yellow. *Germen* with 3 blunt salient angles; *style* straight, angular; *stigmas* 3, twisted. *Capsules* much smaller than in the two following species, chestnut-brown, obtusely trigonate, shining, about equal to the segments of the perianth, excluding the long, very sharp, mucronate point. *Seeds* 3, dark reddish brown, somewhat pellucid, ovato-elliptical, striato-rugulose, with a very small roundish and flattened crest or caruncle; smaller than those of *L. Forsteri*.

2. *L. pilosa*, Willd. *Broad-leaved Hairy Wood-rush*. "Cæspitose, leaves hairy, panicle subcymose but little branched spreading, peduncles 1-flowered bent back when in fruit, sepals acuminate rather shorter than the retuse capsule, its valves truncated, seeds with a long hooked appendage at the top, filaments about half the length of the anthers."—*Br. Fl.* p. 453. *Juncus pilosus*, *L.*: *Host. Gram. Aust.* iii. t. 110. *E. B.* t. 736.

In rather dry groves, thickets, and on bushy banks, often amongst dead leaves; very common. *Fl.* March—May. *Fr.* May, June. 24.

In Quarr copse, St. John's wood, Firestone copse, and other places about Ryde. Common at Apse castle.

Root creeping and densely tufted with capillary brownish fibres, emitting numerous erect or inclining simple stems, from about 6 to 12 inches high, round, slender, smooth, solid and leafy. *Radical leaves* numerous, mostly shorter than the stems, linear-lanceolate, broader than in *L. Forsteri*, flat, and pointed with thickened, pale brown, callous tips, gradually attenuated downwards into their brownish, membranous, concave bases, more or less beset along their margins with white, flocculent, silky hairs; *stem-leaves* few, distant, alternate, much shorter than the rest and usually more hairy, especially at the top of their close glabrous sheaths; all dark green or partly russet-brown, glabrous and somewhat shining. *Panicle* subcymose, of a rounder more irregular outline than in *L. Forsteri*, its branches once or twice unequally forked, and, as well as the *pedicels* or ultimate divisions, divaricate, spreading or reflexed in various degrees, particularly in seed, subtended at its base by an erect bract, much broader and more leaf-like than in *L. Forsteri* or *L. Borreri*. *Flowers* solitary, the size of those of *L. Forsteri*. *Bracts* mostly 2, sheathing the base of each flower, broadly ovato-scariose, acute or acuminate. *Segments* of the perianth lanceolate, very acute, mucronato-acuminate, dark chestnut-brown, their points and margins whitish and scariose, the three inner segments flat, the outer concave, keeled. *Anthers* pale yellow, linear-elliptical, above twice the length of the greenish and flattish filaments. *Germen* ovoid-trigonus, much shorter than the stamens. *Capsule* broadly ovoid, trigonus, obscurely 3-lobed, with as many very blunt angles, the summit very obtuse or rounded, with a subconical figure, sometimes minutely tipped with the base of the style, but scarcely mucronate, much longer than the persistent perianth. *Seeds* exactly resembling in form, size and colour those of *L. Forsteri*, but furnished with a similar appendage about twice the length, attenuated into a point and uncinately contorted.

3. *L. Borreri*, Nob. *Borrer's Wood-rush*. "Leaves lax drooping," "peduncles strongly divaricate and reflexed," "capsule shorter than the erect or converging perianth ovoid somewhat acute trigonous," "seeds with a straight blunt appendage," "anthers some-

what exceeding the filaments in length." *L. nova* sp., *Bromf. in Phytol.* vol. iii. p. 985.*

Apse castle, near Shanklin, 1841. [Quarr copse, near the gate entering from the Newport road, *A. G. More, Esq., Edrs.*]

This species, new, I believe, to Europe, or overlooked for a variety of *L. pilosa*, has some characters in common with that plant and *L. Forsteri*, with others peculiar to itself. *Root* as in *L. pilosa* and *L. Forsteri*. *Stems* numerous, erect or diverging as in those, but taller and more slender in proportion, otherwise quite similar. *Leaves* much like those of *L. pilosa* and fully as broad, but for the most part longer than in that or *L. Forsteri*, and when viewed in the aggregate they appear of a brighter green, the lowest leaves especially remarkably more elongated than in those, more spreading and recurved at the extremities, about equal to both in point of hairiness. *Panicle* very similar to that of *L. pilosa*, but less compounded, of few primary branches, usually narrower or more oblong in contour, the branches very strongly and irregularly divaricate and deflexed as in that, mostly longer and slightly waved or flexuose. * *Bracts* at the base of the panicle, very narrow and erect as in *L. Forsteri*, not broad and foliaceous as in *L. pilosa*. *Flowers* very similar to those of *L. Forsteri*, the *perianth-segments* a little broader than in that species and less acuminate. *Stamens* similar to those of the species just referred to, but *anthers* rather longer than in it. *Ovary* more obtuse, not tapering at top into the style as in *L. Forsteri*, with much thicker more obtuse angles, each angle with a distinct furrow down its centre. *Capsule* much smaller than in either *L. pilosa* or *L. Forsteri*, and greatly shorter than the erect or converging perianth, ovoid, somewhat acute, trigonous, with three thickened, obtuse, furrowed angles. *Seed* always (?) abortive, a solitary one here and there, apparently well-grown, but never, so far as I can find, acquiring full colour and maturity: the few I have been enabled to examine in this seemingly developed but unripe condition resemble those of *L. Forsteri*, and, like them, have a straight blunt appendage or crest, without a trace of any tendency to become hooked† as in *L. pilosa*.

4. *L. Forsteri*, DC. *Narrow-leaved Hairy Wood-rush. Forster's Wood-rush.* Leaves hairy, panicle (mostly) subcymose but little branched, peduncles single-flowered mostly erect, segments of the perianth very acuminate rather longer than the acuminate acute capsule, seeds with an oblong-obtuse crest. *Br. Fl.* p. 453. *Bichenov, Linn. Trans.* xii. 330, t. 9, fig. 2 (fruit). *Juncus*, *E. B.* t. 1293.

In woods, thickets, groves, and on shady hedgebanks, often along with the last species, and perhaps the more frequent of the two in this island. *Fl.* April, May. *Fr.* May, June. 24.

E. Med.—The prevailing species in many parts of the island, as about Ryde, in Quarr copse, and in the open grove between the abbey and Fishbourne. Plentiful in St. John's wood, Apley wood, &c. Abundant in Shanklin chine and about Appuldurcombe. By the roadside between Cherrygin and Uplands. Between Palmers and Whippingham. In woods about Osborne and Norris castle, frequent. Abundant in Bordwood copse, 1845. Parsonage lynch, and various

* [In the absence of any correct published description of the essential characters of this plant, we have extracted a part of our lamented author's detailed description, published by him in the 'Phytologist' (iii. 985). The description given by Mr. Babington, in the third edition of his 'Manual,' is too much at variance with our author's diagnostic characters given in the text to be applicable for our purpose.—*Edrs.*]

† Even here there is a doubt, which only perfectly ripened seeds can dispel. I have ascertained that the crest to the seeds of *L. pilosa* is at first straight, and does not elongate and become hooked till they are at least half-grown.

other places about Newchurch, as Bordwood, &c. Extremely plentiful at Apse castle, in several parts of which it forms large tufts in the sandy friable soil. America. Wood between Ryde and Newport, and at Shanklin, *D. Turner, Esq.* [Bembridge, *A. G. More, Esq.*, Edrs.]

W. Med.—Wood between Swainston and Five Houses, 1845. In Mrs. Goodwin's grounds at W. Cowes.

Root blackish, creeping, though less extensively than in *L. pilosa*, with dense tufted fibres, sometimes interspersed with small fleshy knots or tubers. *Stems* numerous, erect or inclining, from 8 or 10 to 15 inches high, round, leafy, solid, smooth and striated. *Leaves* numerous, mostly shorter than the flowering stems, erect, bright green, narrower in general than in *L. pilosa*, otherwise exactly similar, and, like them, more or less copiously sprinkled with fine, long, silky hairs, that appear to have clung to them by accident; those on the stem shorter, and, as Mr. Bicheno and Sir James Smith remark, perhaps in a trifling degree broader than the rest and more hairy, particularly near the top of their long close sheaths. *Panicle* terminal, cymose, of several compound mostly erect branches, but of which two or three are usually reflexed or divaricate, especially after flowering; the base of each included in a short, pale brown, slightly inflated sheath, with a concave, membranous, taper-pointed *bract* immediately beneath and half-embracing the latter. *Peduncles* single-flowered, erect or partly divaricate. *Flowers* paler than in that species, the *segments* of the *perianth* finely tapering, very acute, nerveless, the 3 outer concave and keeled, the 3 inner flat. *Bracts* 2 or 3 close under each flower, ovate, membranous, brownish, with thin, scariose and often torn edges. *Anthers* erect, pale buff-yellow, almost white, shorter than the perianth, spirally twisted after discharging the pollen, about as long as or rather longer than the compressed ascending *filaments*.* *Germen* green, trigonate, tapering into the long, erect, pellucid *style*; *stigmas* as long as or longer than the style, upright and contorted. *Capsule* reddish brown and shining, acutely triquetrous, the faces nearly plane; simply acuminate, with no obtuse and conical contraction at the summit, and (including the hard, sharp, mucronate apex) about as long as the erect perianth-segments. *Seeds* roundish ovoid or nearly globose, light brown, very smooth, polished and translucent,† reticulato-striate under a high magnifier; *caruncle* large, oblong-obtuse, oblique but not at all hooked, white and diaphanous, expanded over the entire seed as a fine pellicle or tunic, and causing the reticulated appearance just mentioned.

The large, oblong, but not hooked crest of the seed is a sufficient and beautiful distinction between this species and *L. pilosa*, to which it approaches very closely, but when in fruit *L. Forsteri* may be detected by a certain character and aspect, of which it is not very easy to convey an accurate description in writing. The leaves, usually narrower than in *L. pilosa*, vary a good deal in breadth, and are sometimes nearly as broad as in that species; the peduncles, too, are frequently much deflexed after flowering, but never so copiously and so much bent downwards as in that species; and whilst in flower *L. Forsteri* is pretty certainly distinguished by its more upright panicle. The root is less inclined to send out suckers than in *L. pilosa*; the whole plant is usually taller and more slender, and the capsule more decidedly and acutely trigonate, and always very evidently shorter than the acuminate segments of its perianth.

L. Forsteri appears to come into flower just as *L. pilosa* begins to form capsules, or about the middle of April, though partially much sooner, continuing through May partly in flower and partly in fruit, when the seed-vessels of *L. pilosa* are nearly perfected, and its flowers quite past for the season.

This species was named by DeCandolle after [the late] Edward Forster, Esq., F.L.S., who first detected its external characters, as did afterwards Mr. Bicheno

* The comparative length of the anther and filament afford a good and constant character between this species and *L. pilosa*.

† That is to say, when recent, for they become dull, wrinkled and opaque by keeping.

those of the seed. Its geographical range includes the western and central parts of Europe chiefly, and, though local, is probably often overlooked for *L. pilosa*.

** *Panicle of few branches. Flowers in a few roundish clusters.*

5. *L. campestris*, Willd. *Field Wood-rush*. "Leaves linear hairy, panicle of 3 or 4 ovate dense sessile or stalked clusters, segments of the perianth lanceolato-acuminate, filaments much shorter than the anthers, capsules obtuse apiculate, seeds nearly globular with a basal appendage." — *Bab. Man.* p. 334. *Br. Fl.* p. 454. *Juncus*, *E. B. t.* 672.

In dry or barren fields and pastures, sandy and heathy places, amongst short grass; everywhere common. *Fl.* April, May. 24.

Particularly plentiful all over the Dover spit, opposite Bembridge.

The smallest of the Isle-of-Wight species, seldom exceeding 6 inches in height, usually but 3 or 4 inches. *Root* tough, creeping, rather woody, with many long slender fibres. *Stem* simple or occasionally very slightly branched, erect, round, smooth and solid, with usually 3 or 4 leaves, whose long sheaths enclose it to the summit. *Radical leaves* numerous, linear, dark green, ribbed and shining, more or less flat, with brownish, striated, sheathing bases, beset chiefly at their edges with long, white, very soft hairs, easily rubbed off. *Flowers* in 3 or 4, sometimes 5 or 6 dense, oval or roundish, shortly stalked clusters, of which one of the lowermost is generally nearly sessile. *Bracts* 2 or 3 close beneath each flower, whitish, membranous, acute, torn and sheathing. *Segments of the perianth* lanceolato-acute and taper-pointed, dark brown, with a blackish keel and pale membranous edges. *Stamens* shorter than the perianth, with large pale yellow anthers, bursting widely open and scattering a copious yellow pollen; filaments very short. *Germen* obtusely trigonate, somewhat lobed. *Style* longer than the perianth, twisted, as are the 3 filiform, nearly erect, rough stigmas. *Capsule* short, broad, slightly pointed, somewhat 3-lobed and submucronate. *Seeds* ovate, without any crested appendage, but, the point of their attachment at the bottom of the capsule being prolonged into what appears to be such, they look as if inverted.

6. *L. multiflora*, Lej. *Moor Wood-rush*. "Leaves linear hairy, panicle of numerous ovate dense sessile or stalked clusters, segments of the perianth narrowly lanceolate strongly acuminate, filaments about as long as the anthers, capsules obtuse apiculate, seeds nearly twice as long as broad with a basal appendage." — *Bab. Man.* p. 334. *E. B. S. t.* 2718.

β. *congesta*. Clusters collected into a rounded lobed head.

In damp moory ground, turfy, boggy, wet woods, thickets and other moist and shady places; frequent. *Fl.* May, June. 24.

E. Med. — Wood by Little Smallbrook. On the skirts of Lake and Blackpan commons. In and about Apse castle.

W. Med. — About West Cowes.

β. Frequently found with α.

Notwithstanding that some of our best botanists consider this plant a variety of the last, I cannot but be of opinion that Mr. Babington is right in deeming it, as did Smith, DeCandolle and others, a good and very distinct species. The oblong, not globose, seeds, far greater size and height of the plant, its different places of growth and general habit, are all in favour of such a view of its nature. It has usually a very gray and even hoary aspect, and flowers later than *L. campestris*.

Order LXXIX. ALISMACEÆ, R. Br.

"*Perianth* of 6 pieces; 3 outer *sepals* herbaceous, 3 inner petaloid. *Stamens* hypogynous. *Ovaries* several, superior, distinct or slightly united at the base, each 1-celled. *Ovules* solitary, or 2 superposed, attached to the inner angle of the carpel. *Pericarpis* indehiscent. *Seeds* solitary, or 2 attached to the suture at a distance from each other, erect or ascending. *Albumen* 0. *Embryo* undivided, curved like a horse-shoe, with the same direction as the seed.—Aquatics. Leaves radical, on long stalks."—*Br. Fl.*

I. ALISMA, Linn. Water Plantain.

"*Flowers* perfect. *Stamens* 6. *Styles* numerous. *Achenes* many in a head, distinct, 1-seeded."—*Br. Fl.*

1. *A. Plantago*, L. Common or Great Water Plantain. "Leaves all radical cordato-ovate or lanceolate, scape panicled with whorled compound branches, fruit depressed, achenes obtuse with a small rib on the back."—*Br. Fl.* p. 457. *E. B.* t. 837.

In ponds, ditches and slow streams; very common. *Fl.* June—August. 4.

2. *A. ranunculoides*, L. Lesser Water Plantain. "Leaves all radical linear-lanceolate, scape with simple branches in one or two whorls, fruit globose squarrose, achenes obliquely ovate acute 5-angled."—*Br. Fl.* p. 457. *E. B.* t. 326.

Ditches and shallow pools; not common. *Fl.* May—September. ☉.

E. Med.—In one or two of the marsh-ditches on Sandown level, towards Alverstone, in tolerable plenty, with *Polygonum minus*, 1849. In Dashmere pool, at the foot of Bleak down, by the junction of the roads to Chale, Chillerton and Godshill.

W. Med.—Abundant in marsh-ditches at Freshwater gate, and occasionally in other parts of that parish, also near Yarmouth, but much more sparingly. In a pool on a large furzy common called Golden's, Freshwater. Old clay-pit in Hampstead brick-field. In a pool between Yarmouth and Ningwood common, in a field between the road and Leigh wood, 1843.

Whole plant perfectly smooth and glabrous. Root a dense tuft of long, white, simple fibres, slightly creeping or at least emitting short lateral shoots, producing other plants contiguous to one another or in clumps. Leaves numerous, entirely radical, erect, pale green, very narrowly lanceolate or linear-lanceolate, acute and entire, firm, obscurely 3-ribbed, the middle rib forming a rather prominent keel beneath into their often span-long semiterete petioles, which are very vascular and spongy, mostly purplish, finely striated and reticulated with transverse septæ, tapering gradually from their whitish, imbricating, scariosely edged bases: the earlier leaves are, as Bertoloni remarks, quite linear and evanescent. Scape 1 or more (seldom above 2 or 3), erect or decumbent, as tall as or taller than the leaves, terete, simple, usually about a span and seldom exceeding a foot in height, terminated by an umbellate whorl of several unequal simple flower-stalks, from the centre of which are often produced one or two similar whorls, distant from the first or lowermost from being elevated on a prolongation of the scape or common

peduncle: each whorl is subtended by from 2 to 4 small, unequal, acute, scarioso bracts of a brownish colour. *Flowers* solitary, on lengthened terete pedicels, produced in long succession, considerably larger than in *A. Plantago*, about $\frac{2}{3}$ ds of an inch across.* *Sepals* greenish, not half the length of the petals, ovato-rotundate, concave, with white, scarioso, entire margins, many- (about 12-) ribbed, each alternate rib narrower and less distinct than the intermediate one. *Petals* cordato-rotundate, wavy, the edges erose, pellucidly striato-venose and yellow at the base, white or more commonly with a faint purplish blush. *Stamens* short; *filaments* broad, flattened, yellow like the linear *anthers*. *Germen* ovoid, angular, tapering. *Styles* obsolete; *stigmas* sessile, a tuft of pellucid bristles: in *A. Plantago* the styles are very long, distinct and curved. *Capsules* in little globular heads that are scarcely the size of a small pea, somewhat acute, with a minute rather oblique point, bluntly 5-lobed, the 2 superior lobes approximate, with a shallow groove between them, the 3 lower remote from the rest and separated by deeper intermediate furrows. *Seed* solitary, oblongo-elliptical, dark brown, shining and pellucid, longitudinally striated with impressed points, the embryo bent double.

The bruised herb has a rather strong odour, to me resembling that of *Erygium fatidum*, but less powerful. The similarity in the leaves and fruit to *Ranunculus Flammula* doubtless originated the specific name.

Order LXXX. BUTOMACEÆ, Rich.

"*Perianth* of 6 pieces, the 3 inner petaloid. *Stamens* definite or indefinite, hypogynous. *Ovaries* 3 or 6, or more, superior, distinct or united. *Ovules* numerous in each cell or carpel. *Stigmas* as many, simple. *Follicles* several, either distinct and rostrate, or united into one. *Seeds* minute, numerous, attached to a reticulated receptacle, covering the whole inner surface of the cell. *Albumen* 0.—Aquatics. Leaves *very cellular*. Flowers *umbellate, handsome*."—*Br. Fl.*

I. BUTOMUS, Linn. Flowering Rush.

"*Perianth* single, coloured, 6-partite, inferior. *Capsules* 6, many-seeded. *Seeds* fixed to the inner lining of the capsule."—*Br. Fl.*

1. *B. umbellatus*, L. *Flowering Rush. Water Gladiole.* "Leaves linear-subulate trigonous, spathe of 3 leaves."—*Br. Fl.* p. 456. *E. B. t.* 651.

In ponds, ditches, and by river-sides; extremely rare in this island. *Fl.* June—August. 4.

* I remarked in July, 1844, that the flowers of *A. ranunculoides*, being fully expanded during most part of the day, contract, or their petals become incurved towards evening, so as considerably to diminish their apparent size. I suppose the flowers may last only one day, and the incurvation of the petals may be the first step in the process of separation previous to their actually falling away. I am however disposed to believe it rather a state of collapse, analogous to the sleep of some plants, since on examination I do not find the water strewn with the petals of each successive day, which would be the case were they so fugacious as I at first supposed.

W. Med.— In one of the marsh-ditches at Freshwater gate, in small quantity, *Rev. C. Pritchard*, July 11th, 1842!!!

Plant perfectly glabrous. *Root* creeping extensively, emitting leaves, as it appears to me, in a sort of double row, together with copious long white fibres, from the fleshy and almost bulbous origin of the former. *Leaves* all radical, shorter than the stem, erect, bright pale green, linear, acutely triquetrous, more or less spirally twisted, especially at their acute withered tips, sheathing the stem with their broad, hollow, ribbed bases, internally filled with a loose spongy tissue of tubular cells, divided by transverse partitions or septa. *Stem* erect, 2—4 feet high, round, tapering, filled with cellular tissue, and nearly as thick as the little finger at the bottom. *Umbel* solitary, terminal, many-flowered, subtended by an involucre of 3 lanceolate, ribbed, membranous and withered, taper-pointed leaflets, not above an inch in length. *Peduncles* single-flowered, 3 or 4 inches long, rounded, mostly tinged with rose-colour at the base and near the summit, with a sheathing scarioso bract, shaped like the involucreal leaves, at the foot of each. *Flowers* about an inch across, expanding in long succession, very handsome. *Perianth* in 6 ovate, concave, spreading, nearly equal segments, veined, whitish, suffused and streaked with a delicate peach-blossom red, deep rose-colour at the back, with a tinge of umber at the base, their edges minutely notched or crenulate. *Stamens* 9, inserted at the base of the ovaries, two opposite to each of the three outer, and one opposite the three inner, segments,* at first erect, finally spreading, incurved and recumbent on the perianth; *filaments* rose-coloured, tapering, a little compressed; *anthers* dull red, linear-oblong, apiculate, bursting laterally, and when discharging their bright orange-yellow pollen contracted to an orbicular shape. *Germens* 6, rose-coloured, ovate, compressed, tapering into the beak-like styles, which are tipped with the bifid decurrent stigmas, the lobes of which, at first conjoined, are afterwards spread open and a little reflexed. *Capsules* ovate, 1-celled. *Seeds* very numerous and minute, covering the entire inner walls of the capsule.

The leaves of this plant, from their weak spongy texture, are quite incapable of cutting with their angles, which, however acute, are neither cartilaginous nor serrated; hence the generic name becomes very inappropriate, and suggests the probability that a totally different plant was so designated by the ancients; perhaps the really formidable *Cladium* or some of the larger *Carices*, which grow in similar places with our present *Butomus*.

Order LXXXI. TRIGLOCHINACEÆ, Nob.

"*Flowers* perfect, lower ones or all stalked or reflexed. *Perianth* uniform, rarely none, sometimes coloured, but scarcely petaloid. *Stamens* hypogynous. *Anthers* turned outwards. *Ovaries* superior, united or distinct. *Ovules* solitary or two, approximated at the base, erect. *Styles* or *stigmas* 3—6. *Pericarps* indehiscent or 2-valved. *Embryo* without (or ? very rarely in the axis of the mealy) *albumen*, having the same direction as the seed, with a lateral cleft for the emission of the *plumule*. — Marsh herbs, with narrow radical leaves. *Flowers* spiked or racemed."—*Br. Fl.*†

* In other words, the stamens are in two whorls of six and three respectively, the latter being more interior or completely hypogynous than the former or exterior set.

† [The characters of the natural family quoted above are those of "Juncaginaceæ" in the 'British Flora' from which work they are quoted. Our lamented

I. TRIGLOCHIN, *Linn.* Arrow-grass.

"*Perianth* of 6 erect, concave, deciduous leaves, 3 outer and 3 inner inserted a little higher than the others. *Stamens* 6. *Ovaries* 3—6 celled. *Stigmas* 3—6, sessile, plumose. *Anthers* sessile, lodged in the leaves of the *perianth*. *Capsules* 3—6, 1-seeded, united by a longitudinal *receptacle*, from which they usually separate at the base. *Albumen* 0. — Flowers in a naked straight spike or raceme."—*Br. Fl.*

1. *T. maritimum*, L. *Sea-side Arrow-grass*. "Fruit 6-celled ovate."—*Br. Fl.* p. 459. *E. B.* t. 255.

In salt-marsh meadows and pastures; frequent. *Fl.* May—September. *Fr.* July. 4.

W. Med.—In salt-marshes along the Yar, as at Barnfield, &c., abundantly, 1844.

Herb more robust and fleshy than *T. palustre*, and, like that, quite glabrous and smooth, with the same odious scent, but more decided if possible. *Root* creeping, tough, throwing up bunches of leaves, and emitting numerous long, stout, white or reddish fibres from beneath. *Stem* solitary or several distant ones from the same root, ascending at the base, then erect, teretely angular below, numerous and acutely furrowed from the bottom of the spike to its apex, hollow in the centre, from about a foot to 2 or 3 feet in height,* according to the progress of the inflorescence, often purplish. *Leaves* like those of *T. palustre*, though stouter and firmer, truly semicylindrical, though flattening gradually to their points, where they are plane, much less finely drawn out or attenuated to their obtuse, rounded, often brown tips, flat and striate but not channelled above, their sheathing bases, proportionably shorter, with the free extremity of their scarious margins longer and quite entire; decumbent at base or ascending, very commonly incurved and a little falcate, pale glaucous green, their sheathing bases white or purplish. *Flowers* more close-set and numerous than in *T. palustre* and rather larger, on still shorter *pedicels*, which, however, as in that, elongate in fruit, when they nearly equal those of the latter, but are rather more spreading or patent. *Bracts* none. *Perianth* and *stamens* precisely as in *T. palustre*. *Germens* 6, united throughout into a subglobose, hexangular, compound ovary. *Stigmas* 6 dense tufts of radiating, pellucid, simple bristles. *Fruit* erect, about 2 lines in length, ovato-globose or subelliptical, pale whitish or yellowish brown, formed of 6 capsules combined by their inner faces and attached to a common axis at their acute interior angle, the rounded back of each forming $\frac{1}{4}$ th of the circumference of the fruit; separating completely from the base upwards when ripe, not remaining, as in *T. palustre*, suspended from the summit of the axis. The capsules are acutely triangular in section, not obtusely so or even compressed as in *T. palustre*; the seed fills a large portion of the cavity, and is fixed to the truncate bottom of the cell by

author observed in the 'Phytologist':—"The name for the order to which the present genus belongs, Juncaginaceæ, is injudiciously chosen, as liable to be confounded with Juncaceæ. I would propose to substitute Triglochinaceæ, as being at once unequivocal and identical, seeing that Juncago was but an old word for Triglochin, and used for it generically by Tournefort and others until supplanted by the latter."—*Phytol.* vol. iii. p. 1006. Our author's order therefore is strictly synonymous with that, the characters of which we have quoted, in the absence of any drawn up by himself.—*Edrs.*]

* I have found it above 3 feet whilst the entire upper portion of the spike was in flower and bud, and hence had not then attained its utmost elongation.

a very brief point of attachment. *Seed* linear, semielliptical (its interior margin straight), acute.

Professor Bigelow ascribes to the leaves of this plant a sweetish not unpleasant taste, which they certainly do not possess in Europe, where both the taste and odour are about equally unsavoury and repulsive.

2. *T. palustre*, L. *Marsh Arrow-grass*. "Fruit 3-celled nearly linear."—*Br. Fl.* p. 459. *E. B. t.* 366.

In wet or boggy meadows or pastures; not very frequent. *Fl.* June, July. *Fr.* October. 24.

E. Med. Plentiful along the banks of slipped land along the shore between Whitecliff bay and Bembridge, *Mr. Thos. Meehan, jun.* Sandown level, above Alverstone. In a meadow a little E. of Langbridge, where *Utricularia minor* grows, in plenty, 1843. In the meadow below Lower Knighton mill, also plentiful. Moors between Bridge Court and Bow bridge, 1843. [Brading marshes, *A. G. More, Esq.*, Edrs.]

W. Med.—Most profusely in a very boggy meadow a little above Newbridge, towards Calbourne mill, 1843. In the meadow at Apes down in which *Cyperus longus* grows, plentifully. Wet piece of heathy ground close to Sheepwash farm, Freshwater, and by one of the marsh-ditches at Freshwater gate. On wet clay between Thorness bay and the mouth of the Newtown river. Yarmouth. Near Newport, *G. Kirkpatrick, Esq.*!

Herb bright green, perfectly glabrous, with a foetid smell, when bruised, like that of bugs. *Root* a bundle of whitish scarcely branched fibres, crowned with the membranous remains of the previous year's leaves, and emitting besides one or two horizontal, jointed and scaly runners, which, according to Mr. W. Wilson and Bertoloni, produce bulbs at their extremity. *Stem* solitary, erect, slender, terete, hollow in the centre, bright green, from about 6 or 8 inches to nearly 2 feet in height, whitish below, slightly flexuose and attenuated at its base, which is closely embraced by the sheathing base of a single accompanying leaf. *Leaves* several, all radical, shorter than the stem, erect or lax and reclining (?), very long, slender, attenuated and rush-like but not rigid, terete, a little flattened and with a shallow groove above, the apex with a minute, rounded, brown and shining tip; equitant below by their long, greenish and sheathing bases, whose fine scarious margins terminate abruptly at top in a free, rounded, bifid point. *Flowers* in a simple, terminal, constantly elongating raceme, numerous, alternate, erect, small and inconspicuous, greenish or purplish. *Pedicels* about as long usually as the full-blown flowers, erecto-patent. *Segments* of the *perianth* greenish, with purplish edges, in two distinct whorls, the three outer and lower broadly elliptical, hollow and gibbous, slightly spreading or patent; inner and upper similar, but somewhat smaller, erect; all six obtusely keeled at the back with short, blunt, purplish points, those of the inner segments often a little spreading. *Stamens* very short, without *filaments*; *anthers* large, purplish green, broadly elliptical, lodged in the concavity of the *perianth*-segments, the three inner ones quite concealed by the latter, 2-celled, bursting on their outer convex face, their concave backs turned towards the germens, at the base of which they are inserted by a short point or process, hence truly hypogynous; *pollen* whitish. *Styles* obsolete; *stigmas* 3, a tuft of radiating, pellucid, simple bristles. *Germens* 3, sublinear-oblong, closely combined to their summits, which protrude above the *perianth*, elongating as they advance to maturity. *Fruit* erect, almost linear, yellowish brown, of 3 linear-lanceolate indehiscent *capsules*, fitted to the angles of a broadly 3-winged receptacle, to which they are permanently attached at the summit, but separating from it when ripe at their lower very acute extremities, in which state they resemble those pikes or arrow-heads we see in old armouries, with three barbs that spread in the attempt to extract the weapon from the wound. *Seed* solitary, brownish, linear, attached to the bottom of the cell by a short funiculus.

Readily distinguished from *T. maritimum* by the suppression of three of the cells of the capsule, the rudiments of which appear like a tapering hollow rib in the angles of the three remaining cells.

Order LXXXII. ARACEÆ, *Juss.*

"*Flowers* monœcious, numerous, collected upon a *spadix*, which is generally enclosed within a 1-leaved *spatha*; barren and fertile ones usually on different parts of the *spadix*, sometimes intermingled. *Perianth* wanting. *Stamens* usually indefinite. *Anthers* turned outwards, nearly sessile or on flat *filaments*, usually 2-celled, sometimes 1-celled, sometimes 4- or many-celled, two or more being united.—*Fertile flowers*:—*Ovary* free, with 1 or rarely more cells, sessile, solitary or aggregated. *Ovules* solitary or several together, erect, horizontal or pendulous. *Stigma* sessile or nearly so. *Fruit* succulent. *Seeds* pulpy. *Embryo* usually with a contrary direction to the seed, in the axis of fleshy or mealy (rarely without) *albumen*, straight, with a cleft on its side for the emission of the *plumule*. *Radicle* usually at the opposite extremity from the *hilum*, rarely pointing to it.—*Leaves sheathing at the base, convolute in æstivation, sometimes compound, often cordate, usually with branching veins.*"—*Br. Fl.*

I. ARUM, *Linn.* Wake Robin.

"*Spatha* convolute at the base. *Spadix* with the fertile flowers at the base. *Stamens* (sessile) near the middle of the *spadix*, which is naked above. *Ovules* 2—6 in each *carpel*, horizontal. *Stigma* sessile, somewhat eccentric. *Berry* with 1 cell and 1 or few seeds. *Embryo* at the opposite extremity of the seed from the *hilum*."—*Br. Fl.*

"How sweet it us'd to be when April first
Unclos'd the Arum leaves, and into view
Its ear-like flowers their cases burst,
Beting'd with yellowish white or lushy hue;
Though manhood now with such has small to do,
Yet I remember what delight was mine
When on my Sunday walks I us'd to go,
Flower-gathering tribes in childish bliss to join;
Peeping and searching hedgerow-side or woods,
When thorns stain green with slow unclosing buds.
Ah, how delighted, humming on the time
Some nameless song or tale, I sought the flowers;
Some rushy dyke to jump, or bank to climb,
Ere I obtain'd them; while from hasty showers
Oft under trees we nestled in a ring,
Culling our 'Lords and Ladies.'"

Clare.

1. *A. maculatum*, *L.* Common Wake Robin or Cuckow Pint. *Lords and Ladies*. *Vect. Cuckow Babies*. Stemless, leaves entire more or less hastato-sagittate acute or rounded, their lobes

short obtuse and approximate or moderately diverging overlapping at base, spadix clavate shorter than the erect including and pointed spathe. *Linn. Sp. Pl.* p. 1370. *E. B.* v. 19, tab. 1298. *Curt. Fl. Lond.* i. fasc. 2, tab. 63. *Br. Fl.* p. 462.

β. Leaves veined with greenish white.*

In woods, thickets, groves and open pastures, on hedgebanks and the grassy borders of fields; most abundantly everywhere. *Fl.* April—June. *Fr.* July—September. 4.

β. About Bonchurch and Steephill, not uncommonly.

Our hedgebanks are profusely clothed with the broad leaves of the Arum in the later spring and earlier summer months.

From 6 to 8 inches high, quite glabrous. *Root* a roundish tuber the size of a walnut. *Leaves* few, all radical, on long, roundish, sheathing footstalks, quite entire, dark green, often blotched or spotted with purplish black, sometimes veined with greenish white, mostly shining as if varnished beneath, fleshy and succulent, but becoming membranaceous in drying, very various in size and form, often 12 or 14 inches long, hastato-sagittate, commonly acute and much longer than wide, frequently obtuse, rounded or nearly triangular, sometimes of an ovate shape like those of Sorrel; their lobes mostly short, blunt and but little diverging, overlapping at their base, but not usually deflexed, greatly varying in the degree of approximation, being sometimes nearly parallel, at other times spreading considerably and more truly hastate, though never at right angles to the petiole as in the closely allied *A. italicum*, by some (I think erroneously) considered a variety of our present species. *Spathe* a span long, erect, taper-pointed, ribbed, pale greenish, often spotted or clouded with dull purple, contracted a little above the base, where it forms a sac or cavity, containing the organs of reproduction, situated on the lower portion of the *spadix*, and which consist first of a series of rough abortive *germens*, furnished with long variously twisted *styles*: below these at a short interval is a broad zone of several rows of purple, sessile, 2-celled *anthers*; and, lastly, under both is a second set of *ovaries*, of which the uppermost are still rough, abortive and furnished with styles, the lower and more numerous whitish, smooth, with sessile deciduous *stigmas*, like a tuft of hairs, on the summit of each ovary: that portion of the spadix not included in the contracted part of the spathe is clavate, obtuse, naked and deciduous, in colour of every shade between pale yellow-buff or dingy brown and bright purple, much shorter than the inflated hood-like spathe, by which it is completely protected, withering away with the latter after impregnation, together with the leaves: after flowering, the inferior contracted portion of the spathe, which remains dry and membranous when the superior cucullate part has wholly shrivelled up, performs the functions and assumes the appearance of a capsule, closing over the unripe *fruit*, which at length swell, and, bursting their filmy envelope, discover themselves in an oblong cluster of bright scarlet, roundish, sessile *berries*, very juicy and acrimonious, each containing 2, 3, or 4 seeds (mostly 2 or 3), or by abortion 1-seeded. *Seeds* brownish white, nearly globular, rugosely reticulate or areolate, covered with a fine membrane. *Albumen* very white and farinaceous.

The leaves of this singular plant are fully developed in the spring long before the inflorescence, appearing above ground early in February, or in mild seasons even sooner,† and withering away before Midsummer so completely that it would be difficult to trace their remains where they but lately grew in profusion. The varieties with spotted and plain leaves are almost equally common with us, and grow intermixed. Reichenbach, with his usual mania for "splitting," makes two species of them, and observes, after giving the supposed characters of each,

* [This plant is described by Mr. Albert Hambrough in the 'Phytologist' (vol. v. p. 194) as *Arum italicum*.—*Edrs.*]

† I have even remarked them springing up at the close of autumn at Bonchurch.

"Utramque jam vivam observo, in eodem loco *A. maculatum* per octo dies præco-cius est immaculato."* In this island I can perceive no difference in the time of flowering, and the leaves of both are alike variable in size and shape. The spotted form would appear to be the rarer towards the North, where, as in Sweden and Denmark, this variety is nearly an entire stranger. Specimens occur with us occasionally in which the leaves are broadly veined with greenish white as in the foreign *A. italicum*, which is by many botanists regarded as a variety merely of our *A. maculatum*. To myself they have always appeared palpably distinct. The former, with which I have been long familiar in the South of Europe, is a much larger plant than ours, the leaves more perfectly hastate, with very divaricate lobes, that stand nearly at right angles to the midrib, which, as well as the lateral veins, are for the most part strongly marked above with white; the leaves too are more uniform in shape, and do not exhibit the same great diversity of outline as in *A. maculatum*, besides which they are habitually evolved at the close of the year, and remain green through the winter, which is rarely the case with the other, and then only as it were accidentally, in warm sheltered situations, by a sort of natural forcing. *Arum italicum* is the prevailing species over the South and South-west of Europe, where *A. maculatum* is seldom seen except in elevated places. I remarked it, during a journey from Orleans to Bordeaux, to make its appearance for the first time on approaching Poitiers, after which it became common, and about Bordeaux is everywhere to be met with, ranging all along the western maritime departments of France to Brittany as far as lat. 48° or perhaps higher. Throughout Italy it abounds in the most open sunny exposures, not being the shade- and moisture-loving plant that *A. maculatum* is, nor does it, like that, inhabit the more interior countries of the European continent under its limitrophe parallels, as Switzerland, Hungary, Austria Proper, &c.

The acrimony that pervades the entire plant is quickly dissipated by heat or drying, when the tubers yield a beautifully white starchy substance, possessing all the qualities of arrow-root, for which purpose they are dug up in Portland Island, and the prepared farinaceous matter sent to London in considerable quantity, under the name of Portland Sago, chiefly for the use of invalids. Were the demand more general, this island could alone furnish an inexhaustible supply for the market of a valuable production, now neglected because not conventionally used as an article of diet. In ruder states of Society mankind readily seek out and appropriate those spontaneous gifts of Nature which in more civilized communities are overlooked or contemned. The savage starves not, for the field and the forest are his granary, on which he relies for unbought subsistence: the poor of our land perish if the hand of bounty be withdrawn, for they must be fed with the purchased food which labour prepares for the rich as well as the needy. The farinaceous roots of various aroid plants afford subsistence to tribes the most remote from one another, and living under climates the most dissimilar. The Egyptian of ancient and modern times possesses his *Colocasia*, whilst the swart children of Nigritia carried their Eddow and Cress from the shores of Africa to the land of their captivity in the western hemisphere. Nor has Nature denied even to the extreme North a resource against those seasons of scarcity incident to a climate so rigorous, in the fleshy rhizoma of a plant of the same natural order, growing in the frozen swamps about the Gulf of Bothnia. The root of the Marsh Dragons (*Calla palustris*) furnishes the inhabitants of the extreme North of Europe with a white and most palatable bread, a full account of the properties and preparation of which is given by Linnaeus, in his 'Flora Lapponica.'†

It is probable the young fresh leaves of our Wake Robin might, when boiled, furnish an excellent spring kale, as do those of *Caladium esculentum* in the West

* Fl. Germ. Excurs. i. adden. et corrig. p. 138.

† "Panis hic albus est duellis et gratissimus, præsertim recens. Usus hujus panis primarius et receptissimus apud Westrobothnienses, Ostrobothnienses et Novaccolas Lapponiæ. Panis hic longe præfertur pineo, qui nec usurpatur, quamdiu hujus sufficiens prostat copia."—*Fl. Lapp.* p. 250.

Indies. As an object of cultivation, *A. italicum*, from its larger size, and therefore greater yield, would doubtless be preferable to our native species.

There is a popular superstition current in North Wales that this plant grew at the foot of our Saviour's cross, in consequence of which the leaves became spotted. I am indebted to my talented and accomplished friend, Mrs. Owen, for pointing out to me a beautiful allusion to this singular legend in a poem by her sister, the late lamented Mrs. Hemans.

"Yes, these deep inwrought marks,
The villager will tell thee (and with voice
Lower'd in his true heart's reverend earnestness),
Are the flower's portion from th' atoning blood
On Calvary shed. Beneath the cross it grew;
And in the vase-like hollow of the leaf,
Catching from that dread shower of agony
A few mysterious drops, transmitted thus
Unto the groves and hills, their sealing stains,
A heritage for storm or vernal shower
Never to blow away."

Order LXXXIII. TYPHACEÆ, Juss.

"Flowers monœcious, numerous and very closely arranged upon a cylindrical or spherical *spadix* without a *spatha*. *Perianth* of 3 or more mere scales, or wanting and replaced by hairs. — *Barren flowers*: — *Stamens* 1—6. *Filaments* capillary, distinct or united. *Anthers* erect. — *Fertile flowers*: — *Ovule* solitary, superior, 1-celled, containing 1 solitary pendulous *ovule*. *Style* short. *Stigma* simple, unilateral. *Fruit* somewhat dry or spongy, drupaceous indehiscent, 1-celled, at length angular by mutual pressure. *Seed* solitary, pendulous, with a membranous skin adhering to the pericarp. *Embryo* in the axis of mealy *albumen*, straight, with a cleft on one side containing the *plumule*. *Radicule* next the *hilum*. — Herbaceous plants, growing in marshes or ditches. *Stems* without nodes. *Leaves* rigid, ensiform, with parallel veins." — *Br. Fl.*

I. TYPHA, Linn. Reed-mace.

"*Spadix* cylindrical. *Perianth* 0, except hairs. — *Barren flowers*: — *Stamens* 1, or 2—6 and monadelphous, surrounded at the base with 3 or more hairs (sterile filaments?): *anthers* somewhat wedge-shaped. — *Fertile flowers*: — *Pericarp* stalked, the stalk with hairs, either whorled or at its base (sterile filaments?)." — *Br. Fl.*

1. *T. latifolia*, L. Great Reed-mace or Cat's-tail. Vect. *Blackpuddings*. *Blackmoors*. *Blackheads*. *Bacco-bolts*. * "Leaves linear nearly plane glaucous, sterile and fertile spikes continuous, both cylindrical." — *Br. Fl.* p. 460. *E. B. t.* 1455.

* From a resemblance in the spikes to a roll of tobacco. Sometimes, but erroneously, called Bull-rush.

In slow streams, rivers, ponds, ditches and watery pits, in various places. *Fl.* July, August. 24.

E. Med.—About Ryde, rare. In a little pool near Beaper farm. In the brook between St. John's and Little Smallbrook farm, sparingly, 1844. In the upper pond at Knighton house, plentifully. Little pool between Stapler's heath and the farm. In the stream both above and below Horringford bridge, and flowering freely. In a little pool under the cliff at Foreland, *Dr. Bell-Salter*.

W. Med.—By the Medina at Shide bridge, abundantly. Marsh below Carisbrooke castle. By the great pond near the church in the grounds at Gatecombe. Marsh-ditches at Gurnet bay, with the following species. Plentiful and very large in the pond by Kingston copse. Near the western arm of the Newtown river, with the next. In the clay-pit at Squire's brickfield, at Ningwood, 1845. About the Medina and Yar, in plenty, *Mr. Snooke !!!*

The spikes of this species are employed, it is said (*Loudon's Mag.* vi. p. 367), by the weavers of Spitalfields, &c., for cleaning their work, and are also sold to the poor as a cheap but efficient hat-brush.

The species of *Typha*, like many other marsh-plants, have a very wide range over the globe. I have observed *T. latifolia* growing abundantly on the swampy shores of Morant Bay, in Jamaica, where however it appeared slightly to differ from the European type in its greater height and comparative slenderness, as also in the greener less glaucous colour of the leaves and more attenuated catkins. The West-Indian plant may possibly be a distinct species.

2. *T. angustifolia*, L. *Lesser Reed-mace* or *Cat's-tail*. Leaves linear convex below concave above, sterile and fertile catkins a little apart, barren florets seated amidst chaffy scales. *Br. Fl.* p. 460. *E. B. t.* 1456.

β. Leaves very narrow, scarcely half their usual width.

In similar places with the last; the more common of the two with us, especially in old clay-pits. *Fl.* July. 24.

E. Med.—Pond between Wootton bridge and King's quay, with the preceding species. In a wet wood near Alverstone called Bordwood or Borthwick lynch. Slipped land below the cliffs at Luccomb.

W. Med.—In marsh-meadow ditches at Gurnet bay, plentiful but rarely flowering. Almost filling a pool surrounded by wood near Cockleton farm, W. Cowes, nearly 8 feet high and flowering abundantly. Little pool at Pallance gate, flowering freely. Pool between Great Thorness and Elmsworth farms, with *Myriophyllum alterniflorum*. Pool close to the rectory at Shalfleet. Extremely common in pools and watery pits on the heathy ground about the western side of the Newtown river.

β. In vast abundance and flowering freely in some old clay-pits on a rough heathy waste a little E. of Cranmore farm, near Yarmouth, and adjoining Ningwood common, as also in another piece of heathy ground near the western arm of the Newtown river, along with *T. latifolia*. Abundant but not flowering in abandoned clay-pits in the brickfield at Lower Hampstead.

Often as tall as the preceding, but much smaller, narrower and more slender in all its parts. *Stem* round, simple, erect, smooth. *Leaves* very long and narrow, almost semicylindrical at the base, gradually becoming flatter towards the point, where they are quite plane, very smooth on both sides and along their edges. *Barren spike* terminal, as long as the fertile one, yellowish or snuff-coloured. *Fertile spike* placed at an interval of about an inch below the barren, of a darker brown colour. *Filaments* seated amid thin, chaffy, torn scales, various in size; *anthers* yellowish, with dark tips, twisted; *pollen* sulphur-yellow. *Fertile florets* stalked, their pedicels springing from a greenish, conical, mamillary base.

The var. *β*. differs in no respect from the usual state of the species, excepting in the narrowness of the leaves, which are scarcely $\frac{1}{3}$ rd of an inch wide.

II. SPARGANIUM, Linn. Bur-reed.

"*Spadix* spherical. *Perianth* of 3 scales which are broader upwards (sterile stamens?).—*Barren flowers*:—*Stamens* 3, distinct or nearly so: *anthers* ovate.—*Fertile flowers*:—*Pericarp* sessile."—*Br. Fl.*

1. *S. ramosum*, Huds. *Branched Bur-reed*. "Leaves triangular at the base their sides concave, common flower-stalk branched, stigma linear."—*Br. Fl.* p. 461. *E. B.* t. 744. *S. erectum*, L.

In ponds, ditches and slow streams, most abundantly. *Fl.* June—September. 24.

E. Med.—Sandown level. In a pond at St. Helens spit, which is quite filled with it. Ditches near Sea View.

W. Med.—Plentiful in the marsh at Freshwater gate. Pond near Freshwater farm, in great plenty and very large. Gurnet bay.

The largest of our British species.

2. *S. simplex*, Huds. *Unbranched Bur-reed*. Leaves triangular at the base their sides flat, common flower-stalk simple, stigma linear. *Br. Fl.* p. 461. *E. B.* t. 745. *S. erectum* β., L.

In ditches, pools, &c., with the last, but less frequently. *Fl.* July—October. 24.

E. Med.—In several ditches on Sandown marshes. Ditches between Brading and St. Helens, frequent. Abundant in Lashmere pond, at the foot of Bleak down. Marsh-meadow ditches on the East end of Alverstone lynch, 1849.

W. Med.—In a pool by the cottage on the skirts of the fir-plantation above Burn wood, in abundance, 1844.

Root a bundle of long, lax, pale fibres and a few white runners. *Stem* 1—2 feet high, flexuose, round, solid, leafy and simple, unless the branch-like peduncles, each supporting a solitary terminal flower-head, without any lateral ones as on the main stalk, be viewed as ramifications. *Leaves* long, as tall as or rather taller than the stem, very vascular, erect, linear, prismatic, yellowish green, concave and sheathing at their membranous and filamentous bases, nearly flat above, with thin smooth edges and a not very acute point, sharply triangular beneath, the sides flat or in the lower part of the leaf slightly convex, not, as in *S. ramosum*, concave. Heads of *barren flowers* 3 or 4, approximate at the summit of the stem, small, round, sessile, yellow even before expansion, not blackish as in *S. ramosum*. *Anthers* yellow. *Fertile flowers* in 3 or 4 dense globular heads below the barren ones, alternate and distant, the 2 or 3 highest sessile from the close incorporation of their peduncles with the common stalk, the lowermost and often the one above it on a partially free and erect *peduncle*, arising, like those of the other fertile heads, from the axil of a long, leafy, concave *bract*, of which that beneath the uppermost head is far smaller than the rest and suddenly bent down.

Dr. Bell-Salter has remarked to me that the lowermost and stalked head of flowers in *S. simplex* commonly arises from the main stem, considerably above and not from the axil of the undermost leaf as in *S. ramosum*, and this accords with the figures in *E. B.* and *Fl. Londinensis*, as also with dried specimens from Shropshire, but in some gathered in this island the inferior head of flowers is axillary as in the branched Bur-reed.

This species very much resembles the preceding, of which it has by some been deemed a variety, but its characters are constant enough to make such a supposition more than doubtful. Though very variable in size, it never attains to anything like the dimensions of *S. ramosum*, and the colour is of a lighter and paler green than in that species.

3. *S. natans*, L. *Floating Bur-reed*. "Leaves floating plane, common flower-stalk simple, stigma ovate very short, head of sterile flowers mostly solitary."—*Br. Fl.* p. 461. *E. B.* t. 273.

In ditches, pools, sluggish rivers and streams; very rare? *Fl.* July. *Fr.* September, October. 24.

E. Med.—Very profusely in the stream immediately above Alverston mill, but never, I believe, flowering there or in any of the running waters in the island, however slow the current may be. In the Medina and Yar, in abundance, *Mr. Snooke*.

W. Med.—In some little pools (old clay-pits) called, as well as I can ascertain, Appey pools, on a small common a little E. of Cranmore farm, near Ningwood, and which are nearly filled with *Typha angustifolia*, I found this species in some plenty, August, 1840.

The smallest and slenderest of our three species. *Root* long, slender, creeping, throwing out at intervals bundles of white fibres and leaves. *Stem* round, smooth, solid, very variable in length according to the depth of water, floating or procumbent upon the mud or weeds about the margin, in which case or when the water is shallow the whole plant does not exceed 6 inches in length. *Leaves* numerous, sheathing, beautifully reticulated, very long, narrow (in my specimens barely $\frac{1}{4}$ th of an inch wide), of a pale pellucid green, very thin, riband-like, obtuse, perfectly flat or keelless, by which this species may be immediately distinguished from the barren floating form of *S. simplex* or *S. ramosum*, so common in our streams; the floral and one or two of the uppermost stem-leaves, which are partly above water, are firmer and greener than the lower submerged leaves. Heads of *barren flowers* mostly solitary. Heads of *fertile flowers* generally two, seldom three, the upper one quite sessile, the lower one occasionally on a short *peduncle*, each in the axil of an erect short leaf, concave and inflated at the base, flat at the extremity, serving as a *bract*. *Ovaries* (germens) in globular heads as in our other species, ovato-conical, obtusely angular. *Stigmas* ovato-oblong, obtuse and sessile. *Seeds* (drupes) in globular heads like those of *S. simplex*, but far smaller, scarcely larger than small peas or pistol-bullets.

The transverse reticulation is far less conspicuous in the leaves of *S. ramosum*, and probably also of *S. simplex*, than in the present species.

The plant indicated as *S. natans* by Mr. Snooke I believe to be identical with a floating form of what I take to be *S. simplex*, and which I find very abundantly in the Medina, and in ditches on Sandown level, where there is a slow current. As it does not produce flowers in this situation, there is some uncertainty about the species.

The French name, Rubanier, for this genus alludes no doubt to the floating and riband-like leaves of *S. natans*.

Order LXXXIV. PISTIACEÆ, Rich.

"*Perianth* 0. *Flowers* 2, monœcious, enclosed in a *spatha*, but not born on a spadix.—*Sterile flowers* solitary. *Stamens* 1—2 and distinct, or the *filaments* united, thick, and bearing 3—8 *anthers*.—*Fertile flowers* solitary. *Ovary* 1-celled, with 1 or more erect or horizontal *ovules*. *Style* short. *Stigma* simple. *Fruit* somewhat membranaceous and indehiscent, or bursting transversely, or baccate, 1- or more seeded. *Seeds* with a coriaceous thick ribbed skin, and a thickened indurated *foramen*. *Embryo* either in the axis of a fleshy *albumen* and having a lateral cleft for the emission of the *plumule*, or at the apex of the *nucleus*. *Radicle*

at the opposite extremity from the hilum. — Floating frondose plants, minute and usually lenticular, or with large lobed fronds." — *Br. Fl.*

I. LEMNA, Linn. Duckweed.

"*Spatha* membranaceous, urceolate. *Stamens* 1—2, distinct, each bearing a 3-celled didymous anther (the cells bilocular?). *Fruit* urticular. — Fronds without distinct stem or leaves, floating on the surface of the water, and increasing, not only by seeds, but, far more abundantly, by gemmæ or buds, concealed in lateral clefts of the parent frond, which, growing out on two opposite sides into new plants, and these again producing offspring in the same way, while still attached to their parent, present a most curious appearance." — *Br. Fl.*

1. *L. trisulca*, L. *Ivy-leaved Duckweed*. Fronds thin pellucid elliptic-lanceolate caudate at one end at the other serrated, roots solitary. *E. Fl.* i. p. 32. *E. B.* t. 926. *Br. Fl.* p. 464. *Fl. Dan.* ix. t. 1586.

In clear standing water, pools and ditches, but local. *Fl.* June, July. ☉.

E. Med. — Ditches in Sandown level, abundantly, very profusely in those immediately around the fort. [Pond near the brick-kiln, Bembridge, *A. G. More, Esq.*, Edrs.]

W. Med. — Ditches in the marsh at Easton, *Fl. Vect.*

2. *L. polyrhiza*, L. *Greater Duckweed*. Fronds opaque obovato-rotundate somewhat convex beneath, roots numerous clustered. *E. Fl.* i. p. 33. *E. B.* t. 2458. *Br. Fl.* p. 464. *Fl. Dan.* ix. t. 1589.

In clear still water, with the last species, and scarcely less local than it. *Fl.* not yet seen in Britain. ☉.

E. Med. — Abundant in marsh-ditches between Yarbridge and Yaverland, as well as in other parts of Sandown level.

W. Med. — Ditches in the marsh at Freshwater gate.

3. *L. minor*, L. *Lesser Duckweed*. Fronds opaque nearly ovate flattish above and beneath, roots solitary. *Sm. E. Fl.* i. p. 32. *E. B.* t. 1095. *Br. Fl.* p. 464. *Fl. Dan.* ix. t. 1587.

Abundant in stagnant water, ponds, ditches and plashes, whether clear or miry. *Fl.* July. ☉.

4. *L. gibba*, L. *Gibbous Duckweed*. "Fronds obovate nearly plane above hemispherical beneath." — *Br. Fl.* p. 464. *E. B.* t. 1233. *Fl. Dan.* ix. t. 1588.

In ponds and ditches, but far rarer than any of the foregoing. *Fl.* June—September. ☉.

W. Med. — In a small pond near Yafford farm, growing intermixed with *L. minor*, 1845.

Order LXXXV. NAIADACEÆ, Juss.

"*Flowers* perfect and all sessile, or imperfect and monœcious or diœcious. *Perianth*? of the *perfect flowers* of 3—4 wedge-shaped or clawed scales, or wanting; of the *imperfect* ones usually wanting, sometimes of 1—2 scales. *Stamens* definite, hypogynous. *Ovaries* solitary or several, 1-celled. *Ovules* usually solitary, erect or pendulous, rarely 3 and erect. *Style* simple, or more or less deeply 2—3 cleft. *Pericarp*s dry, indehiscent, 1-celled, 1- (or rarely 2-) seeded. *Embryo* without *albumen*, with a thin skin, having a lateral cleft for the emission of the *plumule*. *Radicle* next the *hilum*, or at the opposite extremity of the seed. — *Submerged or floating aquatics with very cellular leaves and stems. Flowers inconspicuous, sometimes spiked.*"—*Br. Fl.*

I. POTAMOGETON, Linn. Pondweed.

"*Flowers* perfect, sessile, upon a *spike* (or *spadix*?) which issues from a sheathing *bractea* (or *spatha*?). *Perianth* single, of 4 clawed scales. *Stamens* 4. *Anthems* sessile, opposite the scales of the *perianth*. *Pistils* 4, which become 4 sessile *achenes*. *Styles* and *stigmas* undivided."—*Br. Fl.*

* *Leaves* alternate, upper ones floating, broader than the rest. *Stipules* free.

1. *P. natans*, L. *Broad-leaved Pondweed*. "Lower leaves linear submembranaceous or wanting, upper elliptical coriaceous floating on long stalks many-nerved distinctly cellular, fruit (large) keeled at the back."—*Br. Fl.* p. 471. *E. B.* t. 1822.

In ponds, ditches and slow streams; frequent. *Fl.* June, July. 24.

2. *P. oblongus*, Vir. *Oblong-leaved Pondweed*. "Leaves all stalked, upper ones coriaceous floating oblong-elliptical, lower linear-lanceolate, achenes minute with their back always obtuse and rounded, spike slender cylindrical densely flowered upon a long terete peduncle."—*Bab. E. B. S.* t. 2849. *Br. Fl.* p. 470. *P. natans* ε., *Mert. and Koch.*

In wet ditches and bogs, on marshy heaths, &c.; I believe a very common species with us. *Fl.* July. 24.

E. Med.—On Blackpan and Lake commons.

W. Med.—Cockleton bog?

** *Leaves* alternate, ovato-lanceolate or oblong, all submersed. *Stipules* free.

3. *P. lucens*, L. *Shining Pondweed*. "Leaves stalked elliptic-lanceolate mucronate denticulate flat, with several opposite pairs of parallel nerves springing from the midrib connected by reticulations, stipules winged, spikes cylindrical many-flowered."—*Br. Fl.* p. 468. *E. B.* t. 376.

In ponds and ditches, probably common. *Fl.* June, July. 24.

E. Med.—Marsh-ditches at Sandown.

4. *P. crispus*, L. *Curled Pondweed*. "Stem compressed, leaves lanceolate waved and serrated 3-nerved sessile, fruit beaked."—*Br. Fl.* p. 468. *E. B. t.* 1012.

In ponds, ditches and slow streams. *Fl.* June, July. 24.

E. Med.—Marsh-ditches at Sandown. Pond at the brick-kiln, Bembridge, *Dr. Bell-Salter*.

W. Med.—Ditches in the marsh at Easton, abundantly.

*** *Leaves alternate, all linear, submersed. Stipules free.*

5. *P. pusillus*, L. *Small Pondweed*. "Leaves narrow-linear 3—5 nerved with obscure connecting-veins, peduncles 2—3 times longer than the somewhat lax spike, stem slightly compressed."—*Br. Fl.* p. 467. *E. B. t.* 215. *Fl. Dan.* ix. t. 1451.

In ditches and stagnant water, both fresh and brackish; not rare. *Fl.* July. 24.

E. Med.—Marsh-ditches by the Dover at Ryde, abundantly. Brading marshes, in profusion. Marsh-ditches between Brading and St. Helens, *Frederick Townsend, Esq.*, 1844 !!!

W. Med.—Ditches in the marsh near Easton, *Mr. W. D. Snooke*.

The smallest and slenderest of our species. Whole plant submerged, excepting the small flower-spikes, which appear above the surface in July, distinguishing it from the *Zannichellia* and *Ruppia*, which commonly grow intermixed with it. *Root* a few brownish slender fibres. *Stem* filiform, round or compressed, more or less branched, from a span (as in my specimens) to 1 or 2 feet in length (*Sm.*) *Leaves* alternate, those beneath the flower-stalks opposite, an inch or two in length, scarcely a line in breadth (except in the larger variety, *P. compressus* of authors), olive-green, acute, with a distinct central rib, and one often obscurely marked on each side near the margin, and which joins the midrib a short distance from the point of the leaf. *Spikes* $\frac{1}{3}$ rd of an inch long, several times shorter than their stout peduncles, that are often thicker than the stems themselves, of mostly 2 interrupted whorls of greenish flowers. *Peduncles* dilated and compressed below the spikes. *Fruit* roundish ovate, tipped with the somewhat oblique obtuse stigma.

**** *Leaves alternate, all submersed. Stipules adnate.*

6. *P. pectinatus*, L. *Fennel-leaved Pondweed*. "Leaves distichous setaceous or linear 1—3 nerved sheathing by means of their adnate stipules, spike interrupted, achenes large 3-ribbed at the back, the two lateral ribs sometimes obsolete."—*Br. Fl.* p. 466. *E. B. t.* 323.

In rivers, ponds and ditches, both of fresh and salt water. *Fl.* June, July. *Fr.* July, August. 24.

E. Med.—Ditches on Brading marshes, 1844. Ditches around Sandown fort, 1842.

W. Med.—In a small pool on the marshes at Barnfield, near Yarmouth, 1844. Ditches in the marsh at Easton, plentifully, and appearing to be the large-fruited salt-water variety of the plant, the *P. maritimum* of L. and DC., &c.

Herb very variable. *Root* perennial, originating from a tuberous lump, then creeping horizontally, slender, much branched (*Sm.*) *Stem* floating, various in length according to the depth of water, from 1 foot in still to 8 or 10 feet in running water (*M. et K.*), round, finely striated, copiously branched, the branches repeatedly forked, hence having a fasciculate appearance. *Leaves* numerous,

bright green, alternate, very finely linear, setaceous or almost capillary, which they very soon become on exposure to the air, in the specimens before me appearing under a high magnifier rounded or nearly terete, not flat, more or less grooved above, very indistinctly single-nerved from the shining through of a central chord, transversely reticulated, springing from long close sheaths, that embrace the stem, are somewhat open at bottom, lined with the stipule, which projects beyond it into a pointed scarious appendage, analogous to the ligule in grasses, and which falls away for the most part. *Spikes* solitary, axillary or terminal, on terete simple peduncles, of various, mostly very great, length, more or less interrupted. *Flowers* large, sessile, in pairs opposite to each other or 3 together. *Segments* of the *perianth* rounded, entire, concave. *Anthers* large, of 2 white oblong lobes diverging below, bursting at the back. *Nuts* pale greenish or grayish brown, one or two sometimes abortive, roundly ovate or obovate, subcompressed, slightly and subterebiculate rugose and shining, the short broad apex a little oblique, in my fresh specimens without a keel or any lateral ridges.

***** *Leaves* all opposite and submersed. *Stipules* none.

7. *P. densus*, L. *Close Opposite-leaved Pondweed*. "Leaves crowded all opposite pellucid amplexicaul ovato-acuminate or lanceolate, spikes shortly stalked about 4-flowered finally reflexed."—*Br. Fl.* p. 466. *E. B.* t. 397.

In ditches and pools. *Fl.* June, July. 24.

E. Med.—Marsh-ditches at Sandown. [Brading marshes, *A. G. More, Esq., Edrs.*]

W. Med.—Ditches in the marsh at Freshwater gate, abundantly.

Well distinguished by its narrow opposite leaves and the absence of stipules.

II. *RUPPIA*, Linn. Tassel Pondweed.

"*Flowers* perfect, about 2 on a *spike* (or *spadix*?) arising from the sheathing bases of the leaves, which perform the office of a *spatha*. *Perianth* 0. *Stamens* 4. *Anthers* 1-celled. *Style* and *stigmas* undivided. *Achenes* 4, on long stalks, 1-seeded. *Albumen* 0."—*Br. Fl.*

1. *R. maritima*, L. *Tassel Pondweed*. *Sea Tassel-grass*. *E. B.* t. 136. *Fl. Lond.* t. 50. *Br. Fl.* p. 471.

In ditches and pools of salt water; very commonly. *Fl.* July, August. 24.

E. Med.—Ditches at the back of the Dover, Ryde. Ditches between Springfield and Old Fort.

W. Med.—Salt-water ditches about Yarmouth and Freshwater, plentifully. Ditches in the salt-marsh near Yarmouth, in the greatest abundance, *Mr. Snooke*.

[*β. rostellata*. Abundant near the sluice at Brading, *A. G. More, Esq., Edrs.*]

III. *ZANICHELLIA*, Linn. Horned Pondweed.

"*Flowers* monœcious.—*Barren flowers*:—*Perianth* 0. *Stamen* 1. *Anthers* 2—4 celled.—*Fertile flowers*:—*Perianth* single, of 1 leaf. *Germens* 4 or more. *Styles* undivided. *Stigma* peltate. *Achenes* nearly sessile."—*Br. Fl.*

1. *Z. palustris*, L. *Horned Pondweed*. *E. B.* t. 1844. *Br. Fl.* p. 472.

In salt- and fresh-water ponds and ditches, in various places. *Fl.* July, August. ☉.

E. Med.—Ditches on the Dover marsh, plentiful. Ditches between Springfield

and Old Fort, which are nearly all filled with this plant and *Ruppia*, 1839. [Brading marshes, *A. G. More, Esq.*, Edrs.]

W. Med.—Ditches at Freshwater, almost constantly with only a 2-celled anther. In a pool on a moory pasture near Mottiston mill, in plenty, 1848. In a little pool of fresh water near Gurnet bay.

Stigmas rounded or very broadly cordate, rather irregular in size and shape, but never lanceolate, attached to the style near their circumference, delicately transparent crystalline and colourless, like thin laminæ of the clearest ice. *Capsule* not toothed at the back, but bluntly tuberculate.

Wahlenberg says the anther is occasionally either 2-, 3-, or 4-celled, but I rarely find more than 2 cells, or the stigmas otherwise than rounded or very obtusely angular, dentate on the margin and delicately transparent.

For remarks on *Z. palustris* and *Z. dentata* see Hooker's Companion to the Bot. Mag. No. VI.

IV. ZOSTERA, Linn. Grass-wrack.

"*Flowers* imperfect. *Stamens* and *pistils* inserted in 2 rows upon one side of a flat thin *spadix*. *Spatha* foliaceous. *Anthers* ovate, sessile, alternating with the ovate *germens*. *Style* bifid. *Fruit* with 1 seed (bursting vertically, *Wilson*). *Albumen* 0."—*Br. Fl.*

1. *Z. marina*, L. *Common Grass-wrack*. *Vect. Grassweed*. "Leaves linear 3—7 nerved, peduncle of the *spatha* thick shorter than the linear *spadix*, achenes striated."—*Br. Fl.* p. 473. *E. B.* t. 467.

In shallow creeks and inlets of the sea, at the mouths of rivers, also in ponds on salt-marshes, &c. *Fl.* July, August. 24.

E. Med.—About Ryde pier. Commonly thrown up on the shore at Ryde after heavy gales.

W. Med.—At the mouths of the Yar and Medina, and plentiful in the pools of salt or brackish water on the marshes between Yarmouth and Freshwater.

A troublesome weed in shallow waters, by impeding the passage of boats, as in the Southampton river crossing over to Hythe, &c., where it impedes the progress of small craft.

2. *Z. nana*, Roth. *Dwarf Grass-wrack*. "Leaves 1-nerved, stipular sheaths truncate, peduncle of the *spatha* as long as the *spadix* not thickened upwards, *spadix* short few-flowered with extra marginal appendages."—*Br. Fl.* p. 473. *Borr. in E. B. S.* t. 2231.

In similar places with the last, and with which it is usually mixed. *Fl.* August. 24.

E. Med. Found in considerable abundance on the shore of Brading harbour, near the ferry opposite Bembridge, by *Dr. Bell-Salter*, Nov. 26th, 1847. [On the sand-head off Ryde, both on the East and West sides of the pier, abundantly, *A. G. More, Esq.*, Edrs.]

First detected as a British species by Mr. Sonder, of Hamburg, amongst seaweeds sent to him from Dover, and confirmed as such by Mr. Borrer, who gathered it in flower abundantly on the mud of Poole harbour in August, 1847, and shortly afterwards in Emsworth creek, which parts Sussex from Hampshire.

Subclass II. GLUMACEÆ.

"Flowers destitute of true perianth (unless the curious urceolate or 2—3 valved covering to the ovary in some Cyperaceæ, or the glumellas of the Gramineæ, be considered such), but enclosed within imbricated alternate chaffy scales or bracteas."—*Br. Fl.*

Order LXXXVI. CYPERACEÆ, *Juss.*

"Flowers perfect or imperfect, furnished each with a solitary partial bractea called a *glume*, imbricated on a common axis or *rachis*, the whole constituting a *spikelet*. *Perianth?* (here called *perigynium*) only in the fertile imperfect flowers, rarely membranaceous, 2—3 valved, the valves distinct or usually united (in *Carex*), generally entirely wanting. *Stamens* hypogynous, definite (1—12), usually 3, with sometimes an additional row of abortive filaments (called *setæ* or *hypogynous bristles*). *Anthers* erect, 2-celled. *Ovary* superior, 1-celled, with one erect *ovule* at its base. *Style* single, 2—3 cleft. *Stigmas* 2—3. *Fruit* an *achene*, crustaceous, or with a corky or fleshy, sometimes bony, skin. *Embryo* lenticular, enclosed in the base of a copious *albumen*.—Stems often angular, frequently without joints. Leaves with entire sheaths. Lower glumes in each spikelet often destitute of stamens or pistil."—*Br. Fl.*

Tribe I. CYPEREÆ.

Flowers perfect. *Glumes* of each spikelet imbricated in two opposite rows. *Perigynium* 0.

I. CYPERUS, *Linn.* Cyprus-grass.

"*Spikelets* many-flowered. *Glumes* keeled, imbricated in 2 opposite rows, mostly fertile, equal. *Hypogynous bristles* 0. *Style* not dilated at the base, 2—3 cleft, deciduous. *Achene* often tipped with the small base of the style."—*Br. Fl.*

An extensive genus, mostly restricted to low situations in the torrid and warmer parts of the temperate zone, having their metropolis in the former as *Carex* has in the latter. They are in fact the Sedges of the South. The roots of some species are aromatic and esculent, whilst the stems of another yielded to the ancients their papyrus: their value is otherwise unimportant. Few are absolutely injurious, but *C. Hydra* (Nut-grass of the W. Indies and S. Carolina, Coco-grass of Louisiana, &c.) is a grievous and almost unconquerable evil to the sugar-planters of those countries.

1. *C. longus*, L. *Long-rooted Sweet Cyprus-grass. English Galingale.* Spikelets linear acute compressed digitato-fasciculate, umbels doubly compound lax or drooping, involucre extremely long leafy, partial ones very small, stem triangular. *Sm. E. Fl.* i. p. 54. *Br. Fl.* p. 475. *E. B.* xix. t. 1309. *Bertol. Fl. Ital.* i. p. 269. *Host. Gram. Aust.* iii. 51, t. 76.

In low wet meadows and pastures and along marshy rivulets, but very rarely. *Fl.* August—October. *Fr.* $\frac{2}{4}$.

E. Med.—In great luxuriance and profusion in a marshy meadow along the stream between the new lighthouse at St. Catherine's (St. Catherine's tower) and Old Castle Point, Puckaster cove, near where it discharges itself into the sea, Sept. 10th, 1839. At Castle mead, Niton, in great plenty, 1844.

W. Med.—In a wet meadow by the roadside nearly opposite the farm-house at Apes down, but sparingly, Aug. 10th, 1839. A very small quantity in a meadow below Carisbrooke castle, on the West side, October, 1839.

Root creeping, of several stout, fleshy, jointed runners, covered with a bright red sheathing epidermis; emitting numerous fibres from the articulations, and terminating in white scaly offsets. *Culm* stout, erect, from 1 to 3 or sometimes above 4 feet in height, bright green, solid, smooth, sometimes slightly twisted, with 3 rather acute angles, the intermediate faces concave; naked for the greater part of its length. *Leaves* 2 or 3 springing from long, close, brownish, striate and reticulated sheaths on the lower half of the stem, linear, firm and rigid, various in length, longer, shorter than or equalling the culm, bright green and shining above, rather glaucous and finely striated beneath, strongly grooved and channelled, with a sharp keel below, and rough-edged chiefly towards the summit, their margins deflexed or a little folded downwards. *Involucre* usually of 3 very unequal more or less spreading leaves, one of which greatly exceeds the others in length, and is sometimes nearly 2 feet long; within these, and at the base of the umbels, are commonly about as many much smaller leaves. *Umbel* terminal, twice compounded, of several principal, slender, lax or drooping, compressed and triangular rays, very unequal in length, from 2 or 3 inches to a span or upwards, each enclosed in a short, pale, basal and tubular sheath, toothed or notched at the summit; *partial umbels* with much shorter rays, that are enclosed in similar sheaths to the principal ones, and having a few linear, leaf-like or scarious bracts at their origin. *Spikelets* in simple or somewhat branched clusters, $\frac{1}{4}$ an inch in length (or even much more in luxuriant specimens), sessile or shortly pedicellate, linear, very acute, compressed, spreading in a digitate form. *Glumes* imbricated in 2 rows, obtuse, their colour rich bright chestnut, with a green, sometimes pale, blunt, 3-ribbed keel. *Anthers* pale yellow. *Ovary* oblong. *Style* linear; *stigmas* 3. *Fruit* (hardened corolla) ovate, punctato-striate, at least when green, but I have not seen it ripe.

The figure in 'English Botany' was drawn from a garden specimen, and, though referred to for this species by Bertoloni and others, is so dissimilar to the numerous examples I have seen from Kent and this island of *Cyperus longus*, that I have considerable difficulty in believing it to be the same plant. In the figure the umbels are represented as quite erect, not at all lax or drooping; the spikelets far broader, more obtuse and very remote, much fewer in each cluster, all sessile, opposite, and as it were arranged in a pinnated manner, 5 or 7 together. Their colour, too, is a more uniform brown.

The root of the wild plant with us has merely a faint sweetish odour, and a slightly warm bitterish taste, hardly deserving to be called aromatic. At St. Catherine's Point, however, the plant has a more perceptible sweetness, which, though not powerful, is very diffusible. It is perhaps only in the drier soil of a garden that these qualities are developed in the degree attributed to our species. The entire plant possesses a degree of sweetness which, though faint and transient, is very perceptible in a bundle of the stems when brought into a close room, or on opening a box containing any quantity of it. Brotero, however, remarks that

the root is often inodorous as well as sweet-scented in Portugal, and Mr. G. E. Smith describes his Kentish specimens as possessing the peculiar fragrance of the species in perfection.

The plant thrives well in water, and becomes very tall and luxuriant, the involucreal leaves attaining the length of a yard or more without losing their extremities by sphacelation, but, gracefully arching, droop in all directions in the most elegant manner possible, recalling the idea of some tropical inmate of our stoves and conservatories.

At St. Catherine's Point the plant was cut for a late hay-crop by the former occupant of the ground, and its sweetness, permanence and ample produce seem to point it out as a valuable object of cultivation on wet meadow-lands. The station is now on the property of my friend George Kirkpatrick, Esq., by whom the meadow has been fenced in for the protection of the *Cyperus*, which, through the zeal of that gentleman, and his love for whatever is rare and beautiful in nature, will henceforth flourish in security from the scythe of the utilitarian farmer.

Tribe II. *SCIRPEÆ*.

Flowers perfect. Glumes of each spikelet imbricated on all sides. Perigynium 0.

II. *CLADIUM*, Schrad. Twig-rush.

"*Spikelets 1—2 flowered. Glumes 5—6, imbricated on all sides, the lower ones empty and smaller. Style with a conical base, deciduous. Achene with a somewhat loose, fleshy, or corky coat, tipped with the ovato-conical but not jointed base of the style. Hypogynous bristles none.*"—*Br. Fl.*

1. *C. Mariscus*, R. Br. *Prickly Twig-rush*. "Panicle much divided leafy, spikelets capitate-conglomerate, stem rounded leafy, margins of the leaves and keel rough."—*Br. Fl.* p. 476. Schœnus, *L.*: *E. B.* t. 950. *Host. Gram. Aust.* iii. 37, t. 53.

In deep bogs and marshy places; very rare. *Fl.* June, July. 24.

W. Med.—In the bog at Easton, Freshwater gate, *G. S. Mill, Esq. !!!*

I am indebted to the kindness of Mr. Mill for dried flowering specimens of this plant from the above station, where I have not succeeded in finding it in flower myself. Though tolerably plentiful in one or two of the meadows there, its occurrence amongst the strong coarse herbage of other Cyperaceæ, and the absence of its conspicuous panicles, had completely screened it from my observation, even on that often-explored spot. The Rev. G. E. Smith has remarked to me that for the full development of the inflorescence the roots seem to require the absolute contact of water, an opinion my own experience confirms. The description was completed from fresh specimens collected at Gomer pond, a tract of partly reclaimed bog on the opposite Hampshire coast, immediately behind Alverstoke, nearly facing the town of Ryde, and where it abounds, attaining a large size.

A tall rush-like plant, the largest of the British Cyperaceæ. *Root* creeping extensively, with long, stout, scaly runners, and emitting copious pale branching fibres from the crown. *Leaves* linear, nearly erect, very firm and rigid, 2, 3, or 4 feet long, pale yellowish green, with a considerable glaucous tinge, from about 3 to 8 or 9 lines in width, strongly conduplicate or channelled in their lower part, with pale, reticulated, sheathing bases, tapering upwards into very long, slender, acute, triquetrous points; smooth-edged and rounded beneath to some distance from the base, when they gradually become acutely keeled, and armed both there and on the margins with extremely firm cartilaginous serratures, pointing for-

wards, which are partly obtuse and partly spinulose, with incurved points, capable of cutting severely if handled incautiously: leaves on the culm bract-like, alternate, with short tight sheaths. *Ligule* none, unless the pale, shining, adnate and tapering, membranous lining of the leaf be considered as such. *Culms* erect, leafy, hollow, jointed, faintly striated, smooth and shining, from 3 to 5 or 6 (sometimes, it is said, 8 or 10) feet high, often $\frac{1}{2}$ an inch in diameter at the base, rounded below, obscurely angular above, and alternately grooved by the contact of the appressed stalks of the flowering branches, ramoso-paniculate for a great portion of their length. *Spikelets* lanceolate, 2 or 3 lines in length, pale fuscous, capitate-conglomerate, in terminal and axillary corymbosely paniculate clusters, the lateral clusters solitary or geminate, each on a long, much-compressed or semiterete, upright and naked stalk, having a short, sheathing, obtuse, bifid and scarious *bract* at its base, concealed by the sheaths of the superior bases of the culm, the whole together constituting a long, interrupted, leafy panicle, a good deal resembling that of some large species of *Juncus*, but vastly superior in size, often $2\frac{1}{2}$ feet in length; in the centre of each terminal cluster or partial corymb is commonly a sessile or very shortly stalked head of spikelets; *branches* of the *panicle* very unequal, smooth, compressed and partly channelled, the secondary and minor with scarious and taper-pointed *bracts* at their origin. *Florets* mostly 2 (rarely 3) in each spikelet, one of them only usually perfected. *Glumes* 6,* closely imbricated, chaffy, of a uniform pale brown, without scarious margins, ovate, more or less acute or rounded and obtuse, entire or slightly emarginate, keeled, scarcely ribbed, the 3 lower and outer much the shortest and empty. *Stamens* 2, sometimes, it is said, 3, placed close under the germen on each side, not all protruding;† *anthers* large, linear-elliptical, with rather long pellucid points; *filaments* stout. *Germen* ovato-lanceolate, continuous with and gradually tapering into the styles, without any apparent enlargement or articulation whatever. *Styles* 2 (sometimes 3?), often cleft, cohering together in their lower half, their summits plumosopubescent, spreading and recurved. *Fruit* drupaceous, about $\frac{1}{4}$ th of an inch long, ovato-acuminate, olive-brown, smooth and polished, its exterior coat (putamen) thin and bony, the interior thicker, fleshy or spongy, greenish. *Nut* osseous, ovato-globose, subapiculate, rough and blackish, with a white fleshy kernel.

The dissections of the florets in E. B. are very faulty, neither expressing the apiculi of the anthers nor the elongated form of the germen, which is there drawn as articulated with the style by an enlarged base to the latter; the filaments, too, are represented as slender and tapering.

Cladium Mariscus is said to grow in the West Indies, and it is found in Britain as far North as Sutherland, and in Sweden in the Island of Gothland. I have gathered it near Killarney, in Ireland; so that its range in all directions is very extensive.

III. RHYNCHOSPORA, Vahl. Beak-rush.

"*Spikelets* few-flowered. *Glumes* 6—7, imbricated on all sides, the lower ones smaller, empty. *Hypogynous bristles* several, included, toothed. *Style* subulate, bifid, dilated at the base. *Achene* crowned with the persistent, more or less reticulated, dilated base of the *style*."—*Br. Fl.*

1. *R. alba*, Vahl. *White Beak-rush*. "*Spikelets* in a compact corymb as long as the outer bracteas, leaves narrow-linear, base

* Mertens and Koch (Deutschl. Fl. i. s. 360) assign 6 as the constant number of the glumes, of which the 3 outermost are short, broad and empty, the 2 superior and inner floriferous and oblong, the 6th mostly imperfect.

† In the greater number of the florets impregnation seems to take place within the glumes, the shortness of the filaments not admitting of the anthers protruding.

of the style without teeth, bristles 9—12 with deflexed teeth, stamens 2."—*Br. Fl.* p. 477. *Leighton in Loudon's Mag. of Nat. Hist.* viii. p. 676. *Schœnus, L. : Host. Gram. Aust.* iv. 41, t. 72. *E. B.* t. 985.

On spongy turfy bogs, and springy places on heaths and commons, but not frequent. *Fl.* July, August. 24.

E. Med.—On the marshy skirts of Lake common, in one or two spots abundantly.

IV. ELEOCHARIS, R. Br. Spike-rush.

"*Spikelets* solitary, terminal, many-flowered. *Glumes* imbricated on all sides, uniform, scarcely any empty, lowermost the largest. *Hypogynous bristles* (4—12) toothed, included, rarely none. *Style* 2—3fid, its dilated base jointed upon the *germen*. *Achene* mostly lenticular, crowned with the broad indurated corky base of the style.—*Marsh plants*. Stems simple, leafless, sheathed at the base."—*Br. Fl.*

1. *E. palustris*, R. Br. *Creeping-rooted Spike-rush*. "Stem rounded, root much creeping, stigmas 2, fruit lenticular plano-convex crowned with the compressed base of the style shorter than the 4 bristles."—*Br. Fl.* p. 478. *Scirpus, L. : E. B.* t. 131. *Host. Gram. Aust.* iii. 38, t. 55.

In wet meadows, ditches, by the sides of pools and other marshy places; abundantly. *Fl.* May—July. 24.

E. Med.—In the wet meadow within the walls of Quarr abbey. Abundant on Brading marshes, near the sluice.

2. *E. multicaulis*, Sm. *Many-stalked Spike-rush*. "Stem rounded, root scarcely creeping, stigmas 3, fruit obovate triquetrous crowned with the triquetrous base of the style longer than the 6 bristles."—*Br. Fl.* p. 479. *Scirpus, E. B.* t. 1187. *Scirpus palustris* β., *Linn. Lapp.* ed. 2. *Fl. Dan.* xi. t. 1923.

On turfy bogs and wet commons; rare. *Fl.* May—July. 24.

E. Med.—On the marshy skirts of Lake common (the N. side, adjoining Sandown level), in considerable plenty. In a boggy pasture between Saynham and Dew's place, 1844. Most abundantly on the boggy S.E. declivity of Bleak down, facing Roudé. Bog at Blackpan, *Dr. Bell-Salter*.

W. Med.—Bog at Freshwater, *Dawson Turner, Esq.*, *Fl. Vect.*

Plant smaller than *E. palustris*, from about 4 to 8 or 10 inches in height. *Root* a little creeping, densely caespitose, with whitish flexuose fibres. *Culms*, both barren and fertile, very numerous, bright green, curved, spreading or inclined, rarely quite erect, round or slightly compressed, faintly grooved or angular, smooth and striate, with exceedingly minute depressed points, and larger, more distant, oblong and pellucid dots; filled internally with a loose aggregate of large tubes or cells, surrounded by smaller ones; but in none of my specimens can I detect the "stout central pith" mentioned by Hooker on the authority of Mr. Wilson, though I have examined a great many in a fresh state for that purpose, and presume therefore that its appearance is only casual. *Sheaths* 1 or 2 at the base of each culm, pale brownish or purplish, scarcely shining, the lowermost loose, chaffy, scale-like and acute, the superior long, close, abrupt, with a short, triangular, incurved and thickened point. *Spikes* terminal, solitary, ovato-oblong, very acute. *Glumes* dull blackish or purplish brown, with narrow, scarious, pale edges, unequal in size, mostly obtuse, the lowest particularly, those near the apex often somewhat acute,

the two basal glumes scarcely larger than the rest, the exterior one very broad, sheathing and bractiform, thick and prominent behind by the prolongation of the culm into itself, deeply emarginate at the summit of its round flat border, and hence presenting an obcordate figure; interior basal glume longer than the outer and partially embraced by the latter, ovate, with a thick greenish keel, quite entire like the rest.

V. SCIRPUS, Linn. Club-rush.

"Glumes of one valve, imbricated on all sides, equal, one or two of the outer ones sometimes sterile. Bristles sometimes wanting. Style inarticulated, deciduous, leaving a small mucro."—*Br. Fl.*

1. *S. pauciflorus*, Lightf. *Chocolate-headed Club-rush*. Stem rounded, its sheaths leafless, spike ovate few-flowered, two outer glumes the largest obtuse shorter than the entire spike, stigmas 3, style scarcely deciduous not jointed. *Sm. E. Fl.* i. p. 56. *Br. Fl.* p. 483. *E. B.* xvi. t. 1122. *Fl. Dan.* xi. t. 1862. *Host. Gram. Aust.* iii. t. 58.

On wet boggy heaths; very rare. *Fl.* June, July. 2l.

E. Med.—[Boggy slope at the end of St. Helens green, A. G. More, Esq., Edrs.]

W. Med.—Plentiful on the upper part of the heath at Colwell towards Weston, 1840. Near Yarmouth, James Hussey, Esq., in litt.!

Root of many slender brownish fibres, with white jointed runners. *Culms* several, slender, erect, 8—12 inches high, partly barren, rounded or a little angular near the base; filled with coarsely cellular pith, quite smooth, clothed with brownish or whitish, shining and leafless sheaths, having white, membranous, pointed scales at the origin. *Spikes* solitary, terminal, erect, about $\frac{1}{3}$ rd of an inch long, chestnut- or chocolate-coloured, ovato-lanceolate, few-flowered, their two outermost glumes larger, but much shorter than the more interior ones, mostly unequal in length and obtuse. *Style* long, white, compressed, roughish above, quite continuous with the germen, as may be readily seen in the flowering state, when the transparency of the parts betrays no interruption of continuity whatever; stigmas 3. *Bristles* 6 (sometimes apparently only 4 or 5), rough with deflexed teeth, shorter than or not exceeding the fruit, 3 of them at the very short base of the germen, but exterior to the stamens, the rest a little above the first, and between the filaments and germen. *Fruit* ovate, bluntly triquetrous, beautifully striated, when ripe of a black brown, pale where it tapers off to the apex, at which it is again dark-coloured.

2. *S. fluitans*, L. *Floating Club-rush*. "Stem (or rather floating root) compressed branched, spikes ovate, glumes nearly equal obtuse, stigmas 2, bristles none, fruit obovate plano-convex tipped with the narrow base of the style."—*Br. Fl.* *E. B.* t. 216. *Isolepis*, *Br. Fl.* p. 480. *Eleogiton*, Link., Lindl.

In ditches, pools and watery pits, and on their half-dried-up margins; not uncommon. *Fl.* June, July. 2l.

E. Med.—Marsh-ditches at the upper or N.W. end of Lake common, in great plenty. In watery gravel-pits on Borthwood forest. All along the little ditch or drain bounding the fir-plantation by Winford farm, rooting in soft mud.

W. Med.—Clay-pits on heathy ground near the western arm of the Newtown river.

Plant either floating in the water, or constituting a dense and spongy but treacherous turf round the margins of pools, &c.

3. *S. setaceus*, L. *Bristle-stalked Club-rush*. "Stem compressed with 1 or 2 leaves at the base, spikelets about 2 terminal, general bractea erect leafy much shorter than the stem, achene mucronate ribbed obovate and marked with transverse lines."—*Br. Fl. E. B.* t. 1693. *Isolepis*, *R. Br.*: *Br. Fl.* p. 480. *Host. Gram. Aust.* iii. 44, t. 65.

On wet ditch-banks, in low meadows, drains and other watery and boggy places; frequent. *Fl.* July—November. ☉ (according to Hooker 24).

E. Med.—In a ditch near Ninham farm, by Ryde. Plentiful about Lake common, and in various parts of Sandown level. By Lashmere pond, at the foot of Bleak down. Undercliff, and E. of Shanklin chine, *Wm. Wilson Saunders, Esq.* Meadow by Steephill, *Frederick Townsend, Esq.* [Wet spot on St. Helens green, very sparingly, *A. G. More, Esq.*, Edrs.]

W. Med.—In a boggy meadow a little above Newbridge towards Calbourne mill, sparingly, 1844. Marsh at Easton, *Mr. Snooke* (perhaps *S. Savii*).

Root fibrous. *Stems* forming tufts from 3 to 6 or 8 inches long, spreading in all directions, very slender, partly barren and partly floriferous. *Leaves* 2 or 3 at the base of each culm, channelled, sheathing the flower-stems, which they closely resemble, and, like them, are setaceous and quite smooth. *Spikelets* ovate, pointed, 1—3, on very short pedicels* or even quite sessile, overtopped by a continuation of the stem, greatly exceeding the same part in *S. Savii*. *Glumes* broadly ovate, whitish and membranous, with a green blunt keel. *Fruit* covered with a thin chaffy tunic, turbinate, dark brown, beautifully sculptured longitudinally by prominent ribs, united by minute transverse lines or furrows.

4. *S. Savii*, *S. et M.* *Savi's Club-rush*. "Stem round leafy below, spikelets 1—3 terminal shorter than the unequally 2-leaved involucre, fruit subglobose minutely dotted not furrowed."—*Br. Fl. Hook. in E. B. S.* t. 2782. *Ræm. et Sch.* *S. filiformis*, *Sav.* *Isolepis*, *Schultes*: *Br. Fl.* p. 480. *Parkins. Theat. Bot.* 1270. fig. 9. *Merrett. Pin.* p. 55.

β. *monostachys*. Spikelet solitary, with a shorter involucre bractea. *Hook. l. c.* *S. leptaleus*, *Koch.* *Isolepis*, *Kth.* *Fimbris tifs*, *Vahl.*

In similar places with the preceding, and by much the more frequent of the two. *Fl.* July—October. *Fr.* August—November. ☉ (or 24, *Hooker*).

E. Med.—Most profusely under the bank of slipped land under the cliff in Sandown bay, within half a mile of Shanklin chine, 1844, and where some of the tufts measured as much as 15 inches in diameter. On the farthest end of St. Helens green. Wet spot on Briddlesford heath, 1843. In various places between Niton and Blackgang, especially along the little stream that descends to the sea, in great abundance, as also in most plashy spots on that part of the coast. At Knowle, near Niton, *Wm. Borrer, Esq.*

W. Med.—Colwell heath.

β. In a marshy meadow not far from Landguard farm, near Shanklin, plentifully in one spot, in 1838. [At Lane end, Bembridge,—also along the stream above Brixton, *A. G. More, Esq.*, Edrs.]

Root perennial, of many whitish creeping fibres. *Stems* numerous, 2—6 inches high, obtusely angular, finely striated and dotted, very smooth, each enclosed at the base in a tight sheath, often reddish below, sometimes elongated at the summit so as to resemble barren scapes, but which in this genus are viewed as leaves. *Heads of flowers* terminal, of from 1 to 3 spikelets (solitary in β.), each head subtended by a bractea or involucre of 2 unequal leaves, the uppermost longer than the spikelets in α., but in β. shorter than the mature florets. *Glumes* concave or

* I have seen it in Dorsetshire with spikelets very considerably pedunculate.

very obtuse, with a stout green dorsal rib, brown when ripe. *Style* scarcely enlarged at the base; *stigmas* 3. *Fruit* turbinate, somewhat trigonate, when ripe brown and shining, finely striated, with depressed points. *Bristles* none, though the sometimes persistent filaments may be mistaken for them.

This species, which until within these last few years was entirely overlooked as a native of Britain, greatly resembles *S. setaceus*, but is smaller; the variety β . is also very like *Eleocharis acicularis* in size and habit; hence both forms have been confounded with these two long-recognized species, though obviously distinct from either. It is clearly figured and described in Parkinson, 'Theatrum,' p. 1270, fig. 9, as "*Gramen junceum exile Plimmotha*," small Rush-grass of Plymouth, and is mentioned by Merrett, Pin. p. 55, as growing at the S.E. point of the Isle of Wight.

Though so abundant in this island, *S. Savii* has probably reached with us its eastern limit, as it has not been yet known to occur in any part of Sussex. The species is completely a maritime one, and is never found inland at any considerable distance from the sea.

5. *S. Tabernæmontani*, Gmel. *Lesser Bull-rush*.* "*Spikelets* in compound lateral umbels mostly shorter than the rounded almost leafless stem, glumes notched mucronate rough with raised points ciliated, anthers glabrous at the end, style bifid, achene elliptical compressed (pale brown)."—*Br. Fl.* p. 481. *S. glaucus*, Sm.: *E. B.* t. 2321. *Tabernæmont. Kräuterb.* edit. C. Bauhin. les, Buch. p. 549, fig. 5 (*Juncus sylvaticus*). *Fl. Dan.* xi. t. 1922.

In and along the sides of rivers, ditches and pools, both salt and fresh. *Fl.* June—August. 4.

E. Med.—Marsh-ditches by the Dover, Ryde, pretty plentifully. Brading marshes, plentiful.

W. Med.—Ditches near Gurnet bay, where it is much smaller than at Ryde. Abundant in marsh-meadow ditches between Yarmouth and Thorley, 1843. Marsh-ditches at Easton, Freshwater gate, 1844.

Root horizontal, creeping extensively, cylindrical, covered with reddish brown sheathing scales, and emitting at intervals bundles of reddish fibres and white scaly suckers. *Leaves* none, unless the basal sheaths be considered as such. *Culms* soft, slender, erect, from about 2 to 4 feet in height, round throughout or very obscurely aciculate above, smooth, scarcely striated, of a remarkably bluish, grayish or glaucous green, except just above the etiolated basal part, where the colour changes to bright green, filled up with loose cellular tissue, naked excepting at the base, which is whitish, and clothed with two or three long, pale, pointed and scarious sheaths, that are mostly torn and filamentous at their edges, closely ribbed or striate and reticulated transversely, the uppermost often terminating in a long semiterete point, exactly similar to the lowermost bract, described below. *Panicle* not much compounded, rather small, but variable in size, terminal, but appearing to be lateral as emitted from the sheathing basis of the single lowermost and involucre bract, which resembles a continuation of the culm itself, but is semicylindrical, and, from exposing the internal cellular structure, presents on its flat side the appearance of having been split down the centre: this bract is erect, rigid, acute, with a brownish or withered point, distinctly jointed on the stem, whitish and ribbed at base, as long as or more commonly a little longer than the panicle, or even occasionally considerably exceeding the latter. *Spikelets* ovate, acute, about 3 lines in length, solitary or clustered on the very unequal simple or branched peduncles, which are compressed, subsemiterete and scabrous, rarely if ever more than once compounded, clothed at bottom with loose, cylindrical, ribbed, pointed or truncate sheaths, sprinkled like themselves with rust-

* The Cat's-tail or Reed-mace (*Typha*, Linn.) is commonly, but erroneously, called Bull-rush by many.

coloured scabrosity. *Bracts* (glumes) closely imbricated, roundish ovate, of an uniform dark rusty red or brown, proceeding from innumerable little warty prominences scattered over their outer surface, hence scabrous, their margins scarious, fringed, shortly and abruptly mucronato-acuminate, scarcely keeled. *Filaments* white, at first included and very short, dilated into an obovate shape, finely striate, finally elongate and protruding; *anthers* yellowish, linear, quite devoid of any beard, a little scabrous merely at their summits, and not always that. *Hypogynous bristles* 6, short, retrorsely spinulose. *Germen* ovoid, tapered into the style, without any evident articulation whatever. *Style* white, much exerted, cleft into 2 long, simple, spreading or recurved, roughish *stigmas*, that are protruded before the stamens. *Fruit* palish brown, rotundato-obovate, mucronato-apiculate, plano-convex, a little shining, finely and most minutely punctulato-striate, about equal to or a little shorter than the 4—6 permanent, retrorsely scabrous, hypogynous setæ.

My specimens from the Dover, though very tall, agree with Smith's description of his *S. glaucus* in colour, and in having but two stigmas. The styles appear to fall away before the stamens protrude from the glumes, within which it is possible impregnation may take place, or perhaps that process is effected upon the denuded summit of the ovarium after the separation of the styles, whose usual office of retaining the pollen would in that case seem to be superfluous: this peculiarity in flowering makes the plant appear at first sight diœcious.

This is certainly a very distinct species from the Common or Greater Bulrush (*S. lacustris*), if the above characters are, as they appear to be, constant. Leighton describes the filaments of *S. lacustris* as extended beyond the anther, and terminating in a downy tuft, neither of which is the case in the present species, where the filaments are at first extremely short, obovate, beautifully striate, and attached to the lower extremity of the anther by a minute point merely. He also gives the three stigmas of *S. lacustris* as pubescent: in our present plant they are roughish only with a few spinulose points.

I have not yet (1843) seen the true *S. lacustris* in this island.*

6. *S. maritimus*, L. *Salt-marsh Club-rush*. "Stem leafy triangular, spikelets terminal clustered stalked and sessile, involucre of many foliaceous leaflets, glumes with a mucro between the acute segments of the notch." — *Br. Fl.* p. 482. *E. B. t.* 542. *Host. Gram. Aust.* iii. 45, t. 67.

Plentiful in salt-marsh ditches and pools, and along the muddy shores of tide-rivers and creeks. *Fl.* June—August. 24.

E. Med. — Ditches by the Dover, Ryde. In Brading and Sandown marshes, abundantly.

W. Med. — Abundant in Newtown salt-marshes, &c.

A well-marked species, from its compact roundish heads of large dark brown spikelets, subtended by two or three long and very unequal leaves, sheathing at the base. Glumes torn at their upper edges, with a long mucronate process between their bifid points, proceeding from a green central rib.

7. *S. sylvaticus*, L. *Wood Club-rush*. *Millet*. Stem triangular leafy, panicle terminal cymose repeatedly compound, the branches divaricate, involucre leafy, spikelets aggregate, glumes entire. *Sm. E. Fl.* i. p. 62. *Br. Fl.* p. 482. *E. B.* xiii. t. 119. *Host. Gram. Aust.* iii. 46, t. 68 (opt.)

In moist woods, on wet slipped land, and sides of ditches; not rare. *Fl.* June, July. *Fr.* July, August. 24.

* [This remark was repeated by the author in 1850, in his Notes on the 'Plants of Hampshire.' Vide Phytol. iii. p. 1027.—Edrs.]

E. Med.—In drains or ditches on Sandown level, in many places, but sparingly. By Horringford bridge, and along the ditches opposite Stickworth, very commonly. Between Merry Garden and Cheverton farms, by the stream on the right-hand of the little bridge the road runs over. In a marshy spot on the N.E. side of Youngwood's copse, in great plenty, 1841. By the stream-side between Roude and Bridge Court, pretty plentiful in one or two spots near the latter, 1844; also extremely common in the willow-beds by the side of that stream between Bridge and Bagwich, 1845. Abundant in the Parsonage lynch, Newchurch, 1843. In a willow-thicket between Messley farm and Langbridge, 1842. Most abundantly in a marshy spot in the angle of a copse a little S.W. of Combley farm, 1844. Abundant in a willow-bed, called, I believe, Quobb, on the borders of Sandown marshes and a little E. of Alverstone, 1841. By the bridge at Alverstone, in plenty, *Dr. Bell-Salter*!! By the St. John's turnpike (Monkton mead), *id.*, 1842. Under the cliff at Shanklin, *Dawson Turner, Esq.*, Fl. Vect.

W. Med.—Sparingly in a wet meadow by Newport mill, 1845.

A large and handsome species, with a panicle reminding one of *Luzula sylvatica*, but greenish. About 2 or 3 feet high. *Stem* soft, striated, leafy, with three blunt angles, and filled with a white spongy pith. *Leaves* grass-green, very long and taper-pointed, nearly an inch wide, strongly keeled beneath, many-ribbed, with numerous transverse septa. *Panicle* ample, terminal, cymose, of several principal branches, that ramify at their extremities into many minor and again compounded divisions, ending in numerous slender, rough, partly deflexed *peduncles*, each bearing a cluster of from 1—3 or more small, ovate, greenish, sessile spikelets. At the base of the cyme are several (usually 3 or 4) involucreal leaves of unequal length, with similar smaller ones at the forks of the panicle. *Glumes* ovate, scarcely pointed, blackish green, with about 3 strong central ribs, one or two of the lowermost in each spikelet often empty. *Stigmas* 3, downy. *Bristles* 6 (sometimes 8, *Sm.*), longer than the germen, pointed with deflexed spines, inserted at the base of the ovary outside the stamens. *Filaments* smooth; *anthers* yellow. *Fruit* small, broadly obovate, quite smooth (neither ribbed nor punctate), pale reddish or yellowish, trigonately plano-convex, the angles rather obtuse and prominent; tipped with a short dark point, and shorter than the persistent bristles.

Leighton's figure of the fruit does not seem represented by him with his usual accuracy.

VI. ERIOPHORUM, Linn. Cotton-grass.

"*Spikelets* many-flowered. *Glumes* imbricated on all sides, nearly equal, all fertile or the lowermost sometimes empty. *Hypogynous bristles* several, protruded, very long and silky. *Style* trifid, deciduous. *Achene* triquetrous, tipped with the narrow base of the style, or pointless."—*Br. Fl.*

† *Spike solitary.*

1. *E. vaginatum*, L. *Horse's-tail Cotton-grass.* "Stem above triangular, sheaths below with long setaceous leaves above leafless obtuse inflated, spike ovate."—*Br. Fl.* p. 484. *E. B.* t. 873.

Fl. March—May. 24.

W. Med.—Common in boggy meadows along the Medina above Cridmore. Near Blackgang chine, *Miss Lovell*, in whose herbarium is a very distinct fruit (Sept. 23rd, 1847). *Miss L.* says she picked it under the shore going westward towards Walpen chine from Blackgang.

†† *Spikes several.*

2. *E. polystachion*, L. *Broad-leaved Cotton-grass.* "Stem round, peduncles smooth, leaves linear channelled their upper

half triangular, nut elliptic acuminate or obovate triquetrous."—*Bab. Man.* p. 354. α . Fruit obovato-elliptical. *E. polystachion*, *Linn.*: *E. B.* t. 563. *Leight. Fl. Shrops.* p. 31, and fig. in pl. 2. *E. angustifolium* β ., *Br. Fl.* p. 485.

β . *angustifolium*. Fruit elliptical-acuminate. *E. angustifolium*, *Roth.* *E. B.* t. 564. *Br. Fl.* p. 485.

In boggy or marshy ground. *Fl.* April. *Fr.* June. 24.

E. Med.—Very abundant in boggy ground on Rookley moors, and about the Wilderness, 1844. Abundant on the S.E. face of Bleak down, 1842.

W. Med.—Between Thorley and Wilmingham farm.

β . In bogs and wet land along the coast. In Colwell and Totland bays, common.

Root creeping, with many long whitish fibres. *Stem* erect, roundish, smooth, filled with coarse cellular tissue, dark green and striated. *Leaves* very narrow, linear, tapering to a fine point, those of the stem few (about 3), of the root more numerous, as tall as or taller than the flowering stem, with brown sheathing bases, so sharply keeled and channelled as to appear triangular in section, which they are truly for some distance below their tips. *Spikes* usually 4 or 5, ovate, on smooth and much-flattened pedicels, two of them drooping when in flower, the rest erect and on shorter footstalks, all springing from a foliaceous sheath or *bractea*. *Glumes* lanceolate, thin, pellucid, membranous, pointed, single-ribbed, the outermost all floriferous in my specimens. *Anthers* long, yellow. *Styles* rough on their upper half, as are the long contorted *stigmas*, which are protruded from the anthers, giving the plant the appearance of being diœcious at first sight. *Hairs* at the base of the germen snow-white, flattened and jointed internally, at length about three times as long as the ripe seed. *Nut* brownish black, obovato-elliptical, acutely triquetrous, with mostly compressed angles, the inner face much the broadest; quite smooth, not striated and scarcely shining, tipped with the base of the style.

The plant found about the Wilderness has the elliptic and pointed seed ascribed to *E. angustifolium* by Mr. Leighton, but the hairs are not longer than in the true *E. polystachyon* from Bleak down. The Colwell and Totland-bay plant is probably correctly referred to β . *angustifolium*, as will also most likely be the case with that in the low meadows around Newchurch.

The form of the nut in my specimens of this and of *E. latifolium* perfectly agrees with Mr. Leighton's accurate delineation of both in the 'Flora of Shropshire.'

3. *E. latifolium*, Hoppe. *Rough-stalked Cotton-grass*. "Stem triangular upwards, leaves nearly flat below lanceolate contracted into a triangular point above the middle, stalks of the spikelets scabrous (usually elongated), bristles 2—3 times longer than the cuneato-obovate achene, glumes 1-nerved."—*Br. Fl.* p. 484. *E. pubescens*, *Sm. E. Fl.* i. p. 69. *E. B. Suppl.* i. t. 2633. *Wahl. Fl. Suec.* i. p. 29. *E. polystachyon* (α), *L. ? Flor. Suec.*

In bogs and marshy meadows. *Fl.* April? and May? 24.

W. Med.—Plentiful in the upper and boggy part of Colwell heath, 1841.

Root blackish, creeping, with several stout yellowish fibres, throwing up suckers. *Stem* erect, slightly ascending at the base, which is quite concealed by the blackish brown sheathing remains of the spring leaves, 1—2½ feet in height, hollow, smooth, bluntly triquetrous throughout, rather more acutely so in the upper part beyond the highest leaf. *Leaves* chiefly at the base of the stem, those of the radical shoots longer and narrower, cauline ones few, very distant, erect, flat, short, on close sheaths, which are about their own length and brownish at their summits. *Bracts* foliaceous, variable in length, lanceolate, sheathing and concave below, dark brown, many-ribbed, rough all over at the back with granular prominences,

tapering into a long, rough-edged, paler-coloured and triquetrous point, rounded at the apex. *Spikes* ovate, from 2 to 8 (or 9, *Hook.*), drooping, on simple or slightly branched, furrowed, compressed *peduncles*, that are rough in various degrees with minute subappressed bristles, and extremely unequal in length. *Glumes* ovato-lanceolate, concave, membranaceous, pale at the base, blackish green in their upper half, with a prominent keel-like rib. *Nut* reddish brown, obovate, attenuated downwards, smooth and somewhat striated, the angles prominent, with depressed intermediate faces, obtuse, tipped with the base of the deciduous style, and surrounded by a tuft of pure white compressed hairs, twice, or, as in my specimens, thrice the length of the glumes. Except in its rather greater elongation, compared with its breadth in the plants before me, the form of the seed is well depicted by Sir Wm. Hooker and Mr. Leighton.

Tribe III. CARICEÆ.

Flowers imperfect.

VII. CAREX, Linn. Sedge.

"*Spikelets* several-flowered; *flowers* imperfect, the two kinds in the same or in different spikelets. *Glumes* imbricated on all sides.—*Barren flowers* :—*Stamens* 2—3.—*Fertile flowers* :—*Perigynium* of 1 piece, urceolate enclosing the *pistil*. *Style* 1. *Stigmas* 2—3. *Achene* compressed or triquetrous, very rarely (in *C. microglochin*) with an hypogynous bristle, included within the persistent *perigynium** (which is therefore in this genus supposed to form the external part of the fruit)."—*Br. Fl.*

A vast genus, of which species occur in every part of the world, but are most numerous in the colder half of the temperate zones, very few being indigenous to tropical countries. Many of them are alpine. Of very limited utility, they are at least not injurious to man in an agricultural point of view.

"i. *Spike* simple solitary. *Stigmas* 2.

"* *Diœcious*."—*Bab. Man.*

[?] 1. *C. dioica*, L. *Creeping Separate-headed Carex*. "*Spikelet* simple diœcious, fruit mostly ascending ovate shortly acuminate rough at the margin upwards, leaves and stem smoothish, root creeping."—*Br. Fl.* p. 486. *E. B. t.* 543.

Fl. May, June. 24.

E. Med.—In a moist meadow immediately behind the Wilderness; pointed out

* It may here be observed that the exact form of the fruit (*perigyne* and seed) in the different species of *Carex* is with difficulty conveyed by words, however laboured the descriptions may be. The seed itself is but little liable to vary in shape, and may therefore in general be pretty accurately described; but the *perigyne* is subject to great variation in form, from compression and the degree of inflation producing angles of greater or less acuteness on the same spike. The length, breadth and roughness of the beak, when present, and even the integrity or division of its apex, exhibit puzzling gradations for accurate definition; nor do the number and position of its ribs appear more determinate, being for the most part indistinctly marked or partially obliterated.

to me, growing sparingly in one spot, *Frederick Townsend, Esq.*, June 17th, 1844.*

“** *Androgynous*.”—Bab. Man.

2. *C. pulicaris*, L. *Flea Sedge*. “Spikelet simple, upper half with barren flowers, fruit lax oblong-lanceolate acuminate reflexed, stigmas 2.”—*Br. Fl.* p. 487. *E. B. t.* 1051. *Host. Gram. Aust.* iv. 42, t. 75.

In bogs and on wet heaths and commons; not unfrequent. *Fl.* May, June.

24.

E. Med.—Marshy heathy ground at the back of the great fir-plantation in Long lane, near Arretton. Wet places on Lake common. On Bleak down. Heath near Smallgains farm. Bog at Blackpan, *Dr. Bell-Salter*!

W. Med.—Frequent at Freshwater gate. Upper part of Colwell heath, abundantly. Bog just below Cockleton farm, *Miss G. Kilderbee*.

A small, rigid, slender plant, from 3—10 or 12 inches high. *Root* fibrous. *Stem* erect or inclining, angular and furrowed, quite smooth like the rest of the plant, naked for the greater part of its length. *Leaves* much shorter than the culm, mostly radical, filiform, grooved, resembling those of a *Scirpus*, with long brown *sheaths*. *Spike* solitary, terminal, about an inch long. *Scales* of the *pistillate florets* deciduous in fruit. *Styles* deciduous. *Perigynæ* elliptic-lanceolate, acuminate, entire at the point, at length strongly deflexed, dark shining brown or puce-colour, from whence, and from the shape, the name of the species is derived. *Seed* ovato-oblong, compressed, smooth and shining, with a short blunt point.

“ii. *Spikelets androgynous in a compound continuous or interrupted spike. Stigmas 2.*

“* *Spikelets sterile at the end.*

“† *Root creeping*.”—Bab. Man.

3. *C. divisa*, Huds. *Bracteated Marsh Sedge*. “Spikelets crowded into a somewhat ovate head, the lower ones simple or compound with a leafy erect bractea at their base, glumes with an excurrent midrib, fruit roundish-ovate convex on one side slightly concave on the other, beak acutely bifid with finely serrated edges, stem roughish at the summit.”—*Br. Fl.* p. 492. *E. B. t.* 1096. *Curt. Br. Entom.* xv. tab. et fol. 706.

In meadows and pastures near the sea, and in salt-marshes; not uncommon. *Fl.* April—June. 24.

E. Med.—Marshy meadows behind the Dover at Ryde, in a part of which it constitutes a large proportion of the herbage. Plentiful and very fine at the N. of the Wootton river. In a meadow behind Quarr abbey, dividing Quarr copse from Shore copse, 1842. Abundantly in the meadows between Springfield and Nettlesome point, 1842. At Bembridge, by the roadside opposite the blacksmith's shop at Hillway, *Dr. Bell-Salter*.

W. Med.—By creeks of the Medina above W. Cowes, frequent. Abundantly in a meadow between Yarmouth and Thorley, on the left-hand of the little bridge; also along the shore a little E. of Yarmouth. Gurnet bay, 1837. Abundant in all the marsh-meadows behind Gurnet bay, 1843. Isle of Wight, *Rev. G. E. Smith*!!!

Root very large for so slender a plant, tough, woody, creeping extensively.

* [From a remark made by the author in the ‘Phytologist’ (iii. p. 1034), it appears that he subsequently had some misgivings that the plant found in the above station was *C. pulicaris*, and not *C. divisa*.—*Edrs.*]

Culms erect, a foot or 18 inches high, very slender, triquetrous, a little rough at the angles near the spikes only. *Leaves* few, bright somewhat glaucous-green, very narrow, stiffish, channelled and acute, roughish on the edges, with long sheathing bases, usually as long as or longer than the culms. *Spike* solitary, terminal, of several ovate, acute, whitish brown spikelets, placed near each other in no regular order, not so large as barleycorns. *Bracteas* linear, finely tapering, dilated at the base into a brown membranous appendage, enclosing the lowermost spikelet; very variable in length, often overtopping the spike, at other times scarcely reaching to its summit: each spikelet is subtended by a similar bractea, but without the long leafy point of the general one. *Glumes* much like the partial bracteas, but with a less dilated membranous border, and far shorter points, two or three at the top of the spikelet bearing barren, the rest mostly, though not always, containing fertile, flowers. *Anthers* yellow, awned. *Stigmas* 2, long, white, and as well as the style hairy. *Fruit* yellowish brown when ripe, truly ovate, plano-convex, smooth and shining, a little hollow on the flat inner side, with several pale ribs on the outer convex surface, suddenly tapering at the summit into a short, acutely cloven, serrated beak, equal in length to the glumes: in all the specimens I have examined the edges of the fruit are quite smooth, with a narrow, not dilated, border, of a bright green near the apex. *Seed* pale brown, roundish ovate, lenticular (not at all triquetrous), shining, finely punctate.

The fig. in Fl. Danica, iii. tab. 371, referred to by Hudson himself, is certainly not this species, but may be an indifferent one of *C. flava*. Schkuhr's figure is a professed copy of Goodenough's, and, being coloured from description only, is very unlike nature.

4. *C. intermedia*, Gooden. *Soft Brown Carex*. "Lower and upper spikelets fertile, the intermediate ones sterile, all crowded into an oblong interrupted head, fruit with an acute narrow margin serrated upwards longer than the glumes whose midrib disappears below the summit, bracteas membranaceous the lower ones somewhat leafy, stem triangular with scabrous angles, leaves plane." — *Br. Fl.* p. 492. *E. B.* t. 2042. *C. disticha*, Huds., which Dr. Boott thinks should be restored *à priori*.

In wet meadows, by the sides of ditches, pools, rivers, &c.; not rare. *Fl.* May, June. *Fr.* July. 24.

E. Med. — In a wet meadow at the upper end of Brading harbour, with *C. stricta*, plentifully.

W. Med. — In the marsh by Freshwater gate, 1838. Moist meadow between Brixton and Muggleton, in plenty, 1846: the plant here differs from that at Easton marsh, Freshwater, in its broader and more erect leaves, in its darker (nigro-fuscescent), scarcely yellowish, more densely flowered spikelets, many of which appear to consist throughout the entire spike of pistillate flowers alone. Cockleton bog, *Miss G. Kilderbee*!

Perigynes sessile, imbricated, a little spreading, longer than the glumes, yellowish brown, convex on their outer, plane on their inner, face, ovoid, with thin sharp, serrated but not winged margins, traversed on the back and front by several filiform tawny ribs, gradually tapered to a flat dark brown beak, rough or serrated on the edge and deeply bifid. *Nut* greenish yellow, shining, finely punctate and somewhat wrinkled lengthwise, ovoid-elliptical, very flatly trigonate, the lateral angles obtuse, with a narrow rib-like margin; tipped with a short cylindrical process, on which the style is jointed.

I do not find in my specimens of the ripe and perfect fruit any sign of that widening at the base of the beak mentioned by Babington and figured by Leighton, which I therefore take to be an accidental conformation.

5. *C. arenaria*, L. *Sand Sedge*. "Lower spikelets fertile, upper ones sterile, intermediate ones sterile at the end, all

crowded into an oblong interrupted spike, fruit ovate with a membranaceous margin nerved shorter than the acuminate glumes, bractæ membranaceous lower ones somewhat leafy, stem triangular, leaves plane."—*Br. Fl.* p. 492. *E. B.* t. 928.

β. Culm and spikes upright, root fibrous. *C. Witheringii*, Gray: *With.* 7th ed. t. xx.

On sandy sea-shores; common. *Fl.* May, June. 24.

E. Med.—Plentiful on the Dover at Ryde. Abundant in Sandown bay, on the débris of the green sandstone. Bembridge, not far from the signal-gun.

W. Med.—Abundant in the débris at the foot of the sand-cliffs between Niton and Blackgang, 1847.

β. On the Dover. Sandy shores on the N.E. side of the Isle of Wight, *With.* l. c.

Root or rather *rhizom* extremely long, jointed with bristly sheaths, tough and woody, running horizontally under the loose sand to the extent of several feet or even yards, emitting at intervals bundles of yellowish fibres and flowering shoots, and when chewed or bruised a certain weak spicy taste and smell, like camphor and ginger combined. * *Culms* erect or recurved, 6—10 inches (rarely more) in height, their lower portion, which is partly buried in the sand, rounded, naked, and covered with pale reddish or brownish, close and pointed scales; their upper half slender, green, roughish, with 3 blunt angles. *Leaves* few (3 or 4), springing from nearly the same point, the centre of the culm, and not usually reaching its summit, darkish green, a little glaucous, narrow ($\frac{1}{4}$ th of an inch broad), rigid, erect, recurved and withered at the points, concave above, bluntly keeled below. *Spikes* solitary, terminal, 1—12 inches long, of several ovato-lanceolate, erect or somewhat spreading *spikelets* of a yellowish green colour, the basal ones larger and more distant, the upper ones much smaller and closely crowded. *Scales* ovato-lanceolate, taper-pointed and mucronate, concave, tawny-yellow, with a broad, green, central stripe. *Bracts* like the scales, but with longer and rough-edged points, sheathing, the lowermost one ribbed and somewhat leafy, its point shorter than the spike. *Anthers* pale yellow, with somewhat bristly awns. *Fruit* sessile, as long as the scales, ovato-acuminate, the point finely cloven, compressed, furrowed and convex on the back, quite flat on its inner face, the edges expanded into a broad, green, membranous wing or border, roughish on the margin. *Seed* ovate, flattened, not at all triquetrous, crowned with the permanent *styles*.

This is not essentially a sea-side plant: I have observed it very plentifully in the loose sandy soil near Maidenhall, in Suffolk, where the rare *Sedum glaucum* also grows; and it occurs in very inland countries on the Continent.

“†† *Root fibrous*.”—Bab. Man.

6. *C. vulpina*, L. *Great Compound Prickly Sedge*. “*Spikelets* compound collected into a cylindrical crowded spike, fruit ovato-acuminate plano-convex nerved longer than the glumes divergent, beak finely serrate bifid, stem very acutely triangular, the angles scabrous, leaves broad.”—*Br. Fl.* p. 491. *E. B.* t. 307. *Host. Gram. Aust.* i. 43, t. 56. *C. nemorosa*, Willd.

In boggy marshes, and in wet woods and hedges; extremely common. *Fl.* May, June. *Fr.* June, July. 24.

Stems erect, often 4 or 5 feet long, and reclining amongst herbage, acutely triquetrous, almost winged. *Leaves* sharply keeled, and as well as the stem rough with minute prickles. *Spikes* oblong, cylindrical, dense, about 2 inches in length,

* Schkuhr says the roots of *C. arenaria* are sold in the shops under the name of German Sarsaparilla, and are equally esteemed for the same virtues as the genuine article from America.

of several sessile *spikelets*, terminating the stem. *Perigynæ* from tawny yellow to dark brown when ripe, sessile or very briefly stipitate, ovato-acuminate, much compressed, plano-convex, with about 6 or 7 ribs on each face, of which the three central ones only are continued to the beak, the rest much shorter: a single stout rib edged with green runs along the very acute margin, and terminates in the sharp brownish points of the rather long, gradually tapered and pretty deeply notched beak, finely serrulate on its edges. *Seed* yellowish, broadly ovato-elliptical, much compressed and 2-edged, on a short stalk, minutely dotted and tipped with the base of the style.

Very closely allied to this is the *C. stipata*, Muhl. (*C. vulpinoidea*, Mx.), of N. America, which differs in its softer stems, so deeply and acutely triquetrous as scarcely to present any central core or cavity at the junction of the three flat thin wings or angles; in its perigynæ, which are more convex at the back, very abrupt and flat at the base, which is usually depressed in the centre and on slenderer stipes; in the much longer beak; and, lastly, according to Schkuhr, in having the sheaths of the leaves transversely striated, which is not the case, according to the same authority, in *C. vulpina*. The seed in both are very similar.

7. *C. paniculata*, L. *Great Panicked Sedge*. "Spike panicked consisting of ovate spikelets arranged on elongated diverging branches of a common axis, fruit deltoid or subreniform plano-convex faintly many-nerved margined above and ending in an acuminate winged serrated bidentate beak, stem triquetrous with the angles very sharp and scabrous and the sides flat." — *Br. Fl.* p. 490. *E. B. t.* 1064. *Host. Gram. Aust.* i. 44, t. 58.

β. Smaller, in scattered simple tufts. Panicle close, with short branches.*

In wet boggy woods, thickets, willow-beds and watery meadows; common. *Fl.* April—June. 24.

E. Med. — Plentiful in a wood a little way out of Ryde, near the junction of the road to Ashey and Haven street. Abundant in all the wet thickets about Alverstton, Newchurch. Apse-heath withy-bed.

W. Med. — Marsh on Colwell heath, *B. T. W.*

β. Bog below the bank between Hartsash and Knighton farm, a little above Knighton Lower mill, in plenty, 1845. On boggy meadow-ground near the Wilderness.

Perigynæ spreading and giving a bristly aspect to the spike, tawny brown, substipitate, broadly ovate and somewhat cordate at the base, plano-convex, gibbous at the back, rather longer than the glumes, many- and (often but not always) obscurely ribbed, the ribs usually very distinct on both sides at the base, but vanishing in their course upwards; rather abruptly tapering into a moderately long cloven beak, having a spinulose, ciliated, winged margin decurrent to a considerable distance along the exterior angles of the fruit. *Nut* greenish yellow, broadly ovate, obtuse, abruptly attenuated below, flatly triquetrous, smooth, crowned with the style and its enlarged base.

The dense tufted roots constitute large conical mounds, often several feet in height, used in some parts of England for making hassocks, and serving like stepping-stones to enable the botanist to traverse the boggy thickets without wetting his feet. The long tough culms are employed in this island as a cheap though inferior substitute for straw for thatching ricks, &c.

8. *C. muricata*, L. *Greater Prickly Sedge*. "Spike oblong of 4—6 compact or approximate simple spikelets with brownish ovate pointed scales, fruit ovato-acuminate spreading its acute

* [For some interesting and valuable observations, by which it appears that our author considered this form to be *C. Pseudo-paradoxa* of Gibson and *C. terrecula* of Babington, vide *Phytol.* iii. p. 1040.—*Edrs.*]

rough margins longer than the mucronate glumes, stem with rough angles."—*Br. Fl.* p. 492. *E. B.* t. 1097. *Host. Gram. Aust.* i. 41, t. 54. *C. spicata*, *Huds.*

In moist gravelly pastures. *Fl.* May. 24.

E. Med.—Quarr copse, 1840. In the plantations under the cliff between Shanklin and Cook's castle. Along the top of Parsonage lynch, Newchurch, 1841. Abundant by the roadside between Bowbridge and Godshill, 1843.

W. Med.—By the roadside close to Gurnet farm, near Gurnet bay, in plenty, 1838.

Plant of a bright grass-green, 12—15 inches high. *Root* tufted, blackish and fibrous. *Stems* several, naked above, acutely triangular, deeply furrowed, punctato-striate, with rather convex faces, rough at the angles, especially in the upper part. *Leaves* numerous, bright green, shorter or taller than the flowering stems, narrow, strongly keeled, striated, rough at their edges and keel, especially above. *Spikes* about an inch long, each composed of about 6—10 *spikelets*, the lowermost of which are a little remote, the upper ones crowded, mostly simple or a little compound, each subtended by an acute *bractea*, of which the lowermost is often longer, the rest shorter, than the spikelets: the *upper florets* of each spikelet mostly staminate. *Scales* ovato-lanceolate, mucronato-acuminate, brownish, with broad green keels. *Styles* 2. *Perigynes* more widely spreading than in *C. divulsa*, and distinguishable from those of that species only by the greater roughness of the beak. *Nuts* exactly as in *C. divulsa*.

9. *C. divulsa*, Gooden. *Gray Sedge*. "Spike elongated lax consisting of 5—6" "spikelets which are subremote below with pale membranous acute scales, fruit ovate acute suberect obscurely nerved rough at the point with blunt margins longer than the mucronate glumes, stem with rough angles."—*Br. Fl.* p. 491. *E. B.* t. 629 (young). *Schk. Car.* p. 20, t. W. w. (copied from Michæli, but good.) *Leight. Shrops. Fl.* (bona). *Host. Gram. Aust.* i. 42, t. 55.

In woods, on banks and moist hedge-bottoms; very frequent. *Fl.* May, June. 24.

E. Med.—In many places about Ryde, close to the town, as in hedgerows about the little Bar-ground and elsewhere. On the road towards Upton and Haven street, near the direction. Plentiful, with *C. remota*, under hedges in the lane that crosses the Newport road on Binstead hill, leading to Ninham and Firestone copse. By the roadside between Oakfield and St. John's. Quarr copse. Near Osborne or New-barn farm, E. Cowes. Frequent on hedgebanks about Newchurch, as by the roadside to Mersley, &c., 1844.

W. Med.—In plenty on a low bank immediately facing the Lodge gate at Westover, and by the roadside between Newbridge and Calbourne, &c.

Root blackish, tufted, with long, stout, brownish fibres. *Culms* erect, 12—20 inches high, sharply triangular, furrowed and minutely dotted, leafy only in their lower half. *Leaves* bright green, narrow, as long as or exceeding the culms in length, flattish, spreading in their upper part, roughish towards the tips, with close *sheaths*: the *ligule* ovato-elliptical, its free edges very entire and rolled inwards. *Spike* solitary, terminal, erect, 2 or 3 inches long when in flower, of 6—10 or more ovate or lanceolate, erect, sessile, acute *spikelets*, of a pale silvery green, the three nearest the base more or less remote, the first or lowermost being often very widely separated from the second, and as frequently subtended by an extremely long leafy *bractea*, far overtopping the ultimate spikelet, which I do not remember to have seen in *C. muricata*, the lower bracteas of which are, I think, always far shorter and less leafy: in the specimens before* me the lower remote spike-

* I am desirous of drawing attention to this form or variety of *C. divulsa* as it

lets are all a little compound at the base, as is likewise the terminal one, those in the centre simple or nearly so: in the early flowering state the spikelets are closely approximate or even crowded, nearly as much so as in *C. muricata*. Scales very like those of *C. muricata*, but paler, scarcely at all tinged with russet, and with shorter points. *Perigynes* moderately spreading, longer than the glumes, brownish green, broadly ovate, plano-convex (not triquetrous), the thin inflexed margins forming a hollow rim to the anterior face, of a deeper green than the rest of the fruit, with a few more or less distinct ribs, quite glabrous and smooth, excepting a few small distant serratures towards the apex of the gradually tapered not very deeply cloven beak. Nut greenish or brownish, broadly elliptical or nearly orbicular, much compressed, flatly and subtrigonously plano-convex, very minutely punctato-striate, quite filling the cavity, tipped with the base of the style.

Similar as are the present and preceding species, there appear sufficient grounds for keeping them distinct. Dr. Boott, than whom no one has studied the genus *Carex* more assiduously and profoundly, writes me thus on the subject:—"I think the habit of *C. divulsa* is different from *C. muricata*, and it is found in countries of which *C. muricata* is not a native." *C. divulsa* bears also a strong general resemblance to *C. remota*, from which, however, it is readily known by its larger size, much stouter habit, straight erect spikes, whose spikelets are far less remote, larger and compound; by the acutely triangular stem; and, lastly, by having three stigmas.

"** Spikelets sterile at their base."—Bab. Man.

10. *C. axillaris*, Gooden. *Axillary-clustered Carex*. "Spikelets several, upper ones simple crowded, lower distant composed of several crowded spiculæ, fruit ovato-lanceolate plano-convex tapering bifid serrated above, nut obovate with a beak, glumes shorter than the fruit, root tufted, lower bract as long as or longer than the spike."—Bab. Man. p. 358. Br. Fl. p. 489. E. B. t. 993.

In marshy places, wet woods, and by the margins of pools; rare. Fl. May, June. 2.

E. Med.—First found by me on the margin of a little pool in Apley wood, by Ryde, May 28, 1837. In the Parsonage lynch, Newchurch, with *C. remota*, in tolerable plenty, 1843. In Church lane, Binstead, under the boundary-fence of Quarr copse, 1843, in both places accompanied by *C. remota*.* [Little Smallbrook wood, A. G. More, Esq., Edrs.]

11. *C. Bœninghauseniana*, † Weihe. *Bœninghausen's Carex*. "Spikelets several, upper ones simple crowded, lower distant composed of several spiculæ, fruit lanceolate plano-convex tapering into an almost entire beak strongly serrated from the middle (nut obovato-elliptical pointed?), glumes equalling the fruit, root tufted, tower bract as long as or longer than the spike."—Bab.

presents itself in this island. I had considered it to be the *C. axillaris*, Good., until my friend Dr. Bell-Salter pointed out to me the difference.

* [In his Notes on the Plants of Hampshire, in the 'Phytologist' for 1850, the author expresses his doubts whether some of the above stations do not rather belong to the following species, which he was not conversant with at the time of recording the stations.—Edrs.]

† Named after C. M. F. Bœninghausen, author of the 'Prodromus Floræ Monasteriensis,' 1824; the spelling ought therefore to be as above, not Bœninghausiana, as it is frequently written.

Man. p. 358. *E. B. S.* t. 2910. *Br. Fl.* p. 490. *Kunze, Suppl.* 86, t. 22. *Fl. Dan.* xiv. t. 2300.

On margins of little shaded pools, in woods and thickets, chiefly on a clay soil; very rare? *Fl.* June. 24.

In Quarr copse, near its western extremity, and on the sea-side of the main path, among thick brushwood not far from the shore, in great plenty, June, 1843.

Root creeping, tufted and fibrous. *Culms* numerous, erect or inclining, from about 1 to 3 or even 4 feet in length, striated, rigid and slender, but stouter, firmer and much more acutely angular than in *C. remota*, and especially so at and near the summit below the spike,* where the angles are very sharp and scabrous, and to a much greater distance downwards than in that; in the middle and lower part quite smooth, the faces rather convex, naked for a considerable distance from the top. *Leaves* linear, bright pale green, the superior ones narrow, as long as or longer than the culms, more usually shorter, about 1 or $1\frac{1}{2}$ line in breadth, flattish or at least much less hollowed or concave than those of *C. remota*, very acutely pointed and tapering, with triangular scabrous points, rough along the edges and keel for about half their length downwards, those towards the bottom of the culm very greatly shorter than the superior leaf, the lowest of all even shorter than their sheathing bases. *Spike* terminal, simple, much shorter for the size of the plant than in *C. remota*, the rachis straight, triangular, with three very unequal faces, one of them much broader than the two others (hence appearing 2-edged†), the angles very acute and rough, with cartilaginous serratures; *spikelets* sessile, ovate or ovato-lanceolate, acute, the two lowermost distant considerably from each other, but less so than in *C. remota*, the third and even sometimes the fourth from the bottom tolerably wide apart, and all more or less compound at their base, sometimes (though rarely?) simple, their spiculæ more or less spreading; subterminal spikelets approximate, the terminal crowded, smaller and more pointed than the basal, and simple. *Bracts* subulate, foliaceous, erect, very rough on the margin and keel with trigonous points, the lowermost bract always much longer than the rest and generally overtopping the spike, often quite as long as in *C. remota*, the remaining ones often remarkably shorter than in that species, the inferior bracts not reaching the summit of the spike, those still higher reduced to mere subulate points of their broad plume-like bases, and below the crowded terminal spikelets scarcely distinguishable from the glumes themselves, in these respects agreeing with *C. divulsa*, to which, though sufficiently distinct from both, our present plant and *C. remota* bear a considerable resemblance. *Glumes* ovate, acute and even mucronate, membranous, at first greenish and silvery, finally pale tawny, and having a broad, tapering, bright green keel, and a central, pellucid, often roughish nerve, continued to their apex. *Staminate florets* in all my specimens apparently few at the base of each of the lower spikelets, often scarcely any, one or two occasionally in the centre or upper part of them; more numerous in the terminal and subterminal spikelets, which are sometimes wholly staminate or nearly so. *Anthers* bearded or spinulose at the tips. *Styles* 2, long and tapering. *Perigynæ* substipitate, nearly erect (not spreading), ovato-lanceolate, tapering (not rounded) at base, plane in front, slightly convex at the back, with several prominent ribs, mostly about as long as or longer than the glumes, gradually narrowed into the green, rough-edged, rather deeply cloven beak. *Nut* broadly ovate or ovato-elliptical, much compressed, smooth, tapering into a short cylindrical point, on which the persistent style is apparently articulated; seldom, it would appear from Kunze's observation and my own, perfected.‡

* In *C. remota* the culm is quite smooth or very slightly rough only to the lowermost bract, the rachis only of the spike being scabrous, as is truly remarked by Goodenough.

† One of the angles is often smooth, and so obtuse and indistinct as very nearly to give the rachis a 2-edged form.

‡ [We feel constrained to add that, notwithstanding the minute and able description in the text above, drawn up shortly after the discovery of the plant in

(For still more minute and very accurate description of fruit see Kunze ut supra).

12. *C. remota*, L. *Distant-spiked Sedge*. "Spikelets several (small) sterile at their base very distant, fruit longer than the glume oblong-ovate shortly acuminate plano-convex acute angular bifid at the point, bracteas very long and narrow leafy reaching beyond the spike." — *Br. Fl.* p. 489. *E. B.* t. 832. *Host. Gram. Aust.* i. 40, t. 52.

In moist woods, thickets, and under hedges; very common. *Fl.* May, June. 24.

E. Med. — Common about Ryde, particularly in the lane that intersects the Newport road (Binstead Cross) between Binstead and Ninham. Common in Quarr copse. Very abundant in a boggy copse close to Prestwood, near Ryde, 1849. Abundant in Cleveland wood, Appuldurcombe; and in Marshcombe copse, about the middle pools, 1843. Profusely in the Parsonage lynch, Newchurch, 1843. Briddlesford copse, most abundantly. New copse, near Wootton bridge. Yarbridge. Marshy wood a little S.W. of Combley farm, 1844.

W. Med. — In a copse a little N.N.W. of Freshwater church, called Hookhill copse, or by the country people Copse-lane copse, in plenty, 1844.

A very slender species, growing in dense tufts. *Root* fibrous, partly creeping. *Culms* erect, slender, 12—18 inches high, hollow, somewhat triangular, but much less so than in most species of the genus, one angle chiefly being prominent, the others rounded off or nearly obsolete; smooth except quite close to the summit. *Leaves* bright grass-green, very narrow, erect, about a line in width, roughish chiefly towards the points, as long as or longer than the culms, a little spreading or recurved. *Ligule* somewhat pointed, with broad free edges. *Spikelets* several, pale greenish, quite sessile, ovato-lanceolate, acute, not $\frac{1}{2}$ an inch long, the 3 or 4 lowermost an inch or more asunder, the lowest of all with a very long, leafy, rough-edged *bractea* taller than the stem, the uppermost approximate, smaller and with scarcely any bracteas. *Sheaths* none. *Scales* ovato-acute, pale, a little tawny, with broad silvery edges and a green dorsal line or keel. *Staminate florets* few in the lower part of each spikelet. *Anthers* pale yellow, erect. *Pistillate florets* more numerous. *Stigmas* 2, slender. *Fruit* pale green, about as long as or somewhat exceeding the scales in length, compressed, plano-convex, tapering to a short rough-edged beak, a little cloven at the apex.

13. *C. stellulata*, Gooden. *Little Prickly Sedge*. "Spikelets few (3—4) sterile at their base roundish distant, fruit ovate much attenuated plano-convex acute angular spreading rough at the margin." — *Br. Fl.* p. 488. *E. B.* t. 806. *Host. Gram. Aust.* i. 41, t. 53.

In boggy marshy places, wet woods, &c.; frequent. *Fl.* May, June. 24.

E. Med. — Abundant on the skirts of Lake common, and in Sandown level, &c. Plentiful in New copse, near Wootton. Abundant in boggy meadows about the Wilderness. Rookley moor. Bleak down, in plenty.

Whole herb bright green and glabrous. *Root* densely tufted with numerous whitish fibres, but not creeping. *Culms* numerous, erect only a few (3 or 4) inches high when in flower, and at that time shorter than the leaves, afterwards rising to 6, 8, 10, or even 12 inches, and equalling the latter or the greater part of them in length, bluntly triangular, with rounded or convex faces, roughish below the spike only. *Leaves* numerous, extremely narrow, channelled and tapering,

Quarr copse, our author had subsequently considerable doubts as to the specific distinctness of this plant and *C. axillaris*. Vide *Phytol.* iii. pp. 1063, 1064.—*Edrs.*]

rough-edged, erect, various in length, the lowermost very short. *Spike* an inch long at most, of 3 or 4 alternate, somewhat remote or at least not crowded, equidistant *spikelets*. *Perigynes* when quite ripe spreading in a stellulate manner, sessile, ovate, plano-convex, ribbed, tapering into a long beak, serrated along its sharp green edges, the point very slightly cloven.

This is one of the smallest of our Carices, and bears a great resemblance to the smaller forms of *C. muricata*, but may be known from that species, when in fruit, by its fewer, smaller and rather distant, not crowded spikelets, more spreading, less deeply cloven perigyne, and essentially by having the staminate florets below the pistillate, not above them as in *C. muricata*; lastly, by the general absence of bracts in *C. stellulata*, except below the lowermost spikelet, and that often very small and inconspicuous.

14. *C. curta*, Gooden. *White Sedge*. "Spikelets 4—8 sterile at their base rather distant or sometimes approximated elliptical, bracteas very minute (except the lower one), fruit erect broadly ovate acute plane above slightly convex beneath subobtuse angular faintly striated longer than the glumes."—*Br. Fl.* p. 488. *E. B. t.* 1386. *Schkuhr, Car. tab. C.* p. 43. *Host. Gram. Aust. i.* 37, t. 48.

In bogs and marshes, sides of pools, ditches, &c. *Fl.* "June. 24."—*Br. Fl. E. Med.*—Extremely abundant almost everywhere on Rookley moors, and about the Wilderness, 1844.

Herb of a pale delicate green, quite glabrous, slender. *Root* but slightly creeping, with copious long slender fibres. *Culms* erect, about 12—15 inches high, triquetrous, the angles very acute throughout; roughish only at the summit, hollow and striated, leafless in their superior half. *Leaves* mostly shorter than the culms, chiefly towards the base of the latter, few (3 or 4) erect, linear, $\frac{1}{8}$ th of an inch broad, roughish on the edges and keel, scarcely paler underneath, flattish, finely tapering and striated, on long, white, delicately membranous *sheaths*, in a great measure concealing one another. *Spikelets* from 4 to 7 or even more (I counted 9 on one specimen), most commonly about 5. *Perigynes* scarcely a line in length, soon falling away, crowded into small ovate heads, longer than the glumes, erecto-patent, imbricated, green or when quite ripe pale tawny, substipitate, ovate, acute, compressed, plane on the inner face, convex at the back, with several very distinct ribs on both sides, most numerous on the outer, and in each most strongly marked near the base, the alternate ribs abbreviated; finely punctulato-striate under a high magnifier, tapering into a very short beak, the point of which is quite entire (Schkuhr's figure gives it cloven), the margins inflexed and rough with cartilaginous serratures. *Nut* yellowish, ovato-elliptical, compressed, tipped with the long style.

15. *C. ovalis*, Gooden. *Oval-spiked Sedge*. "Spikelets about 6 sterile at the base oval approximate, fruit as long as the glume ovato-acuminate compressed plano-convex striated with a broad membranous margin rough at the edge, the beak bifid."—*Br. Fl.* p. 488. *E. B. t.* 306. *Host. Gram. Aust. i.* 39, t. 51.

In boggy marshes on wet heaths and commons. *Fl.* June. *Fr.* July. 24. *E. Med.*—Heathy ground between Quarr abbey and Ninham, 1849. In meadows near Newchurch towards Hasely, 1844. On Bleak down in several places, particularly near the old gravel-pits, and not far from the notice-post, 1845. Plentiful in moory ground between Perretton and Horringford, and profusely in moist pastures about Rookley farm and the Wilderness, 1842. Frequent in many parts of Sandown level, and abundant on the boggy parts of Lake common. Ashey common. Stapler's heath. By the Medina above E. Cowes, *Miss G. Kilderbee*.

W. Med.—Easton marsh, Freshwater. Gurnet common, *Miss G. Kilderbee*.

Culms about a foot high, erect, triangular, with smooth edges, except towards the top, and convex striated interstices. *Leaves* linear, bright green, roughish, flat-edged, with close *sheaths*. *Ligule* ovate. *Spike* terminal, of 5, 8, or 10 oval and sessile spikelets, forming by their union a dense head of a similar figure, the lowermost spikelet subtended by an ovate sheathing *bractea*, suddenly contracting into an awl-shaped point, as long as or sometimes much shorter than the head or spike. *Scales* ovato-lanceolate, acute, brownish, with a green central rib continued to the point of the scale, and just equalling in length the plano-convex fruit, the outer face of which it closely embraces. Mature *perigynes* crowded on the ovoid spikelets, and, with them, of a yellowish brown colour, like over-ripe wheat; about the length of the glumes, a little spreading or diverging, giving, with the latter, a rough bristly aspect to the spikelets; about 2 lines in length, ovato-acuminate, and more or less attenuated at the base, plano-convex, with very thin slightly concave margins, both faces traversed by several distinct filiform ribs, and attenuated by their margins into a rather long triangular beak, entire or slightly cloven at the point, and curved with greenish edges, which are minutely spinulose and cartilaginous. *Nuts* rather large, brownish yellow or straw-coloured, very smooth, broadly elliptical or even suborbicular, strongly compressed, the faces nearly flat (scarcely trigonous in section), sharply and briefly attenuated or substipitate at the base, suddenly terminating at top in a cylindrical beak, which is crowned by the very long, partially persistent, filiform style.

"iii. *Terminal spikes barren*, 1 or 2. *Stigmas* 2."—*Bab. Man.*

16. *C. vulgaris*, Fries. *Tufted Bog Sedge*. "Spikelets cylindrical erect 1 rarely 2 barren, fertile 3—4, lower one shortly stalked, sheaths none, lower bractea subfoliaceous with small round dark auricles, glumes elliptic or oblong-obtuse, fruit plano-convex elliptic or obtuse with filiform nerves which disappear upwards and an obsolete or evident entire beak."—*Br. Fl.* p. 494. *C. caespitosa*, Sm.: *E. B.* t. 1507. *C. Goodenovi*, *Gay in Ann. Sc. Nat.* 2d ser. xl. 191. *C. angustifolia*, Sm. in *E. Fl.* iv. p. 127. *Goodenough*, *Trans. of Linn. Soc.* ii. 195, tab. 21, fig. 8. An *C. Gibsoni*, *Bab. ? Ann. and Mag. of Nat. Hist.* ii. p. 168.

β. *Leaves* extremely narrow.

γ. *Pistillate spikes* small, much abbreviated, ovoid-oblong, pointed; *perigynes* broad.

In marshy boggy ground. *Fl.* April, May. 24.

E. Med.—Sandown marshes. In a boggy meadow at the upper extremity of Brading harbour, plentifully. In Alverstoun lynch, with *C. stricta*. Between Newchurch and Alverstoun, frequent.

W. Med.—I find in a meadow near the Albion hotel, Freshwater gate, a plant that appears to be a variety of this species, with the fertile spikes remarkably short and pointed. Bog at Cockleton, *Miss G. Kilderbee* !!

β. On the skirts of Lake or Blackpan common, and elsewhere.

γ. Marshy meadow at Freshwater gate.

A very difficult and variable species, nearly allied to and often confounded with *C. stricta*, and of which the figures and descriptions vary considerably. I shall describe the plant as I find it in this island. * *Root* densely tufted with yellowish fibres, and creeping with long, blackish, scaly runners. *Culms* erect, solid, from about 1½ foot to 2 feet in height, very slender, rather bluntly triquetrous and smooth for about ⅓rds of its length, very acutely triangular and slightly

* The description of this species by the Bishop of Carlisle is exactly that of our Isle-of-Wight plant.

scabrous at the summit, naked or leafless to within a short distance of their base. *Leaves* in all my specimens extremely narrow, not exceeding a line in breadth, quite erect, various in length, much shorter than or nearly as tall as the culm, a little rigid, pale somewhat glaucous-green, acutely taper-pointed, roughish on the edges and near the tips, with a narrow, sharp, dorsal rib or keel, corresponding to a deep groove or channel, on the upper side; their *sheaths* whitish, close, not filamentous in my specimens, nor does this character appear to be constant. *Bracts* foliaceous, erect, narrower than in *C. stricta*, the lower one reaching to the summit of the culm or a little overtopping it, the higher one very much shorter, often more so than the spike it subtends, both with small, rounded, dark-coloured auricles at the base. *Staminate spikes* solitary or with an accessory minute one a little below, slender, its scales blackish brown, rounded, obtuse or partly pointed, especially the upper ones, strongly keeled. *Pistillate spikes* mostly but 2 in my specimens, lanceolate, acute (from the occurrence of barren flowers at the summit), upper one sessile, the lower very shortly stalked, their glumes similar to those of the staminate spikes, but flatter, more uniformly rounded and pointless, a few of the lowermost chiefly somewhat acute: this conformation of the glumes is at variance with the accounts of all authors, who describe them as acute, but they are scarcely represented so in Goodenough's own plate, which must be regarded as authoritative. *Stigmas* 2. *Perigynes* much longer but scarcely broader than the glumes, blackish or purplish brown, sessile, the upper ovate, the lower ovato-lanceolate, flat on the inner, slightly convex on the outer, face, tapering gradually into the short, cylindrical, abrupt beak, which in my specimens is not beset with the minute spinules observed in this species by Mr. Wilson.

The variety γ . is remarkable for the very short and broad spikes, and the dark colour of the perigynes, which are scarcely distinguishable from the glumes in the dried state.

17. *C. stricta*, Good. *Straight-leaved Sedge*. "Spikes erect, barren 1 or more, fertile subsessile elongato-cylindrical, bracts auricled, lowermost leaf-like short, fruit oblong-elliptical acute compressed on both sides nerved closely imbricated with a short entire beak, nut roundish obovate blunt with a short beak, sheath of the leaf connected by filamentous net-work." — *Bab. Man.* p. 362. *E. B. t.* 914. *C. cæspitosa*, *Br. Fl.* p. 495.

In marshy places and shallow pools, *Fl.* April—June. 2f.

Freshwater gate in several places, particularly by the ditch to the right on passing the gate leading from the meadows towards the shore, 1840: certainly the true *C. stricta*, Good., with broad leaves filamentous at the base, fruit in eight rows, spike long, cylindrical and nearly erect.

Perigynes densely imbricated in 8 rows, as remarked by Mr. W. Wilson, in cylindrical, erect, rather obtuse spikes, 2—2½ inches in length, shortly pedicellate, at first a little erect, but when ripe spreading horizontally and becoming yellowish or brownish green, ovate, attenuated at both ends, strongly compressed on each side, thickly and most minutely granulato-striate, otherwise quite glabrous, tapering shortly but not suddenly into a short, blunt, entire, brownish beak, either with or without a few minute spines just below the point. *Nut* acutely triquetrous, pale brown, with greenish angles, the intermediate faces plane or a little depressed.

18. *C. acuta*, L. *Slender-spiked Sedge*. "Spikelets cylindrical elongated slender, barren 1—3, fertile 3—4 more or less remote and barren at top, lower pedunculated often attenuate and interrupted at the base, sheaths none, bracteas long foliaceous, lower often surpassing the stem with pale or ferruginous elongated auricles, fruit oval biconvex nerved green with rusty stains,

beak short entire, glumes dark lanceolate, fertile ones acute."—*Br. Fl.* p. 494. *E. B.* ix. t. 580. *Fl. Dan.* xiii. t. 2247. *Host. Gram. Aust.* i. 70, t. 95. *C. gracilis*, *Curt. Fl. Lond.* ii. fasc. 4, t. 62.

β. Leaves extremely narrow and erect; perigynes ovato-acute, much longer than the very obtuse glumes.

In wet meadows and by ditchbanks; rare. *Fl.* May, June. 2l.

E. Med.—In several meadows in Sandown marshes, abundantly: the last meadow but one on the right before coming into the village is full of it.

β. Foot of Alverstone lynch.

Root blackish, extremely tough, fibrous and creeping with long whitish runners. *Culm* 8 or 9 inches to 2 or 3 feet high, erect or when in flower inclining, solid, very acutely triquetrous, the angles smooth towards the base, rough towards the summit, the faces finely striated. *Leaves* about as long as the culm, rigid, finely tapering and bright green above, a little glaucous beneath, recurved at their extremities, rough along the edges and very acute keel, and most so near the point. *Bracts* sheathless, long, leafy, with roundish, white, membranous, close-pressed auricles, the lowermost and even the next above it far overtopping the spikes, the upper ones very narrow and much shorter. *Staminate spikes* 1 or more commonly 2, approximate or a little remote, erect, slender, 1—2 inches long, bluntly triquetrous, their glumes ovate or ovato-lanceolate, more or less acute or pointed,* the upper ones even mucronate, dark brown or nearly black (sometimes fuscous), with a pale green or whitish keel. *Anthers* pale yellow, with distinct pellucid but not bristly tips. *Pistillate spikes* 3 or 4, nearly sessile, approximate or somewhat remote, particularly the lowest one, cylindrical and somewhat pointed, with usually a few barren flowers at the summit, slender and erect in bloom, thick and a little inclining from their weight when in seed, but not drooping or pendulous. *Glumes* similar in form to those of the barren spike, but more uniformly and acutely pointed and even partly mucronate, very dark, with broad bright green keels, much narrower and shorter than the ripe perigynes. *Stigmas* 2, long, white, tapering, spreading and recurved. *Perigynes* crowded, patent or almost horizontal, much broader than the glumes and in general considerably longer, glabrous, at first light green like those of *C. vulgaris* or *C. paludosa*, very shortly pedicellate, broadly ovate, plane on the outer, a little gibbous or bluntly triquetrous on the inner, face, with faint greenish ribs, terminating in a short, truncate, cylindrical and entire point.

From *C. riparia* and *C. paludosa* the present species may be readily distinguished by its more slender habit, the brighter, not glaucous, green of its much narrower foliage, and by having but two stigmas.

β. comes very near the description of *C. Gibsoni*, Bab., but is twice as tall. Yet the plant here described is, I am convinced, a mere form of *C. acuta*.

* Nothing is more inconstant than the form of the glumes in the same species of *Carex*, nay, even in the same individual and on the same spike, which may, and often does, present them at once acute and obtuse, rounded and acuminate, mucronate and unarmed. In general the superior glumes of a spike have the greatest tendency to acumination, the inferior to obtuseness; and it is the preponderating tendency to one or other of these opposite extremes, rather than the complete development in either, which must be understood as applied to specific character.

"iv. Terminal spike barren, solitary. Stigmas 3.

"* Fruit glabrous.

"† Fertile spikes short, mostly erect."—Bab. Man.

19. *C. flava*, L. *Yellow Sedge*. "Sterile spikelet cylindrical obtuse, fertile spikelets roundish-oval nearly sessile, lowest with a nearly included stalk, glumes obtuse, bractees very leafy, fruit obovate turgid ribbed spreading with a long more or less deflexed beak bifid at the point, stem bluntly triangular smooth.—*α*. Sterile spikelets distinctly stalked, fertile rather distant, beak of fruit deflexed."—*Br. Fl.* p. 497. *E. B.* t. 1294 (var. *lepidocarpa*, teste Boott in litt.) *Host. Gram. Aust.* i. 48, t. 63?*

β. Œderi. "Spikelets all approximated, beak of fruit straight."—*Br. Fl. C. Œderi, Ehrh.*: *E. B.* t. 1773? (parva var. tantum *C. flavæ* testante Boott.) *Host. Gram. Aust.* i. 49, t. 65.

In bogs and marshy meadows; frequent. *Fl.* May, June. *Fr.* July. 24.

E. Med.—On a piece of wet land close to Little Duxmore farm, in plenty, 1844. On the marshy skirts of Lake common.

W. Med.—Bogs at Cockleton. Abundant on the boggy part of Colwell heath, 1844.

β. About Ryde, near Fishbourne and Ninham farm. New copse, near Wootton bridge, 1841. Near Thorley, 1838. Wood between Ryde and Newport, *D. Turner, Esq.*, B. T. W. (given as a var. of *C. extensa*). Bog at Blackpan and Burnt House, *Dr. Bell-Salter*, 1844.

I can find no real difference between *C. flava* and *C. Œderi* but in the want of a curvature to the beak of the perigynes. The staminate spike, being almost sessile, given as a specific character by Hooker, is assuredly inconstant, nor is it so represented in *E. B.* except in the smaller right-hand uncoloured figure; and in my specimens the sterile spike is distinctly as in Sowerby's plate. I find it indeed both sessile and stalked in plants near Ninham farm, by Ryde. (For further remarks on *C. Œderi* see Hook. *Br. Fl.* 4th ed. p. 338).

I am happy to have the valuable testimony of my friend, Dr. Boott, in corroboration of my own more limited experience of the inconstancy of any characters between *C. flava* and *C. Œderi*. The Doctor observes in a letter to me, Nov. 1847:—"Since Linnæus established *C. flava* two species have been made out of it, viz. *C. Œderi* and *C. lepidocarpa*; hence it is a question what *C. flava* is."

20. *C. extensa*, Gooden. *Long Bracteated Sedge*. "Sheaths very short (scarcely any) with extremely long foliaceous bractees, fertile spikelets nearly sessile oblong, glumes sessile mucronate, fruit ovate ribbed with a short straight smooth acuminate beak bifid at the point, leaves very narrow, stem smooth."—*Br. Fl.* p. 497. *E. B.* t. 833. *Fl. Dan.* x. t. 1709. *Host. Gram. Aust.* i. 55, t. 73.

In muddy salt-marshes and meadows by the sea, in several places. *Fl.* June. *Fr.* September. 24.

E. Med.—Moist sandy ground amongst rushes on St. Helens spit, in some plenty. Shores of the Wootton river.

W. Med.—Frequent along the Yar between Norton and Freshwater mill,

* The fig. in Host's *Gram. Aust.* resembles, in its tall slender habit and very small perigynes, a plant I have received from Dr. Boott, under the name of *C. Œderi*, from the Falls of Niagara, and which Dr. B. is inclined to consider distinct from the European plant so denominated.

particularly amongst reeds at the edge of a copse on the E. bank, a few hundred yards below the mill, and near a cottage.

Herb of a pale glaucous-green and remarkably glabrous. *Root* moderately creeping, with many pale reddish fibres. *Culms* numerous, erect, 12—20 inches high, bluntly triangular, solid, rigid, very smooth and shining. *Leaves* shorter than the culm (except those embracing the base of the latter, which often equal or exceed them in length, *Gooden.*), narrow, linear, tapering, channelled, rigid and fleshy, quite smooth excepting within an inch or two of their acutely keeled tips, and often scarcely even there. *Sheaths* rather long and close, those of the root-leaves yellowish or brownish. *Staminate spike* on a very short stalk at the base of one of the two uppermost pistillate spikes, linear, acute, about an inch long, often a little compound below, or accompanied by a distinct but much smaller spike at its base, and which is sometimes partly fertile; *scales* broad, obtuse, chestnut-brown, with a paler dorsal rib. *Pistillate spikes* 3, approximate, the two upper very close together, sessile or very nearly so, with scarcely any sheaths; lower one not an inch at most below the others, its short stalk quite concealed by the more or less elongated sheath, terminating, like that of the spike next above it, in an extremely long spreading or deflexed *bract*, in all respects similar to the leaves themselves. *Scales* of the fertile spikes like those of the barren, but pointed and even partly awned, with a broader, green, central line. *Perrigyne* quite sessile, spreading, longer than the glumes, gibbous or tumid on both faces, minutely striato-punctate, with a rather strong greenish rib along the somewhat acute lateral margin, and tapering to a short, broad, notched rather than bifid, perfectly smooth beak. *Seed* dotted, acutely triquetrous.

21. *C. distans*, L. *Loose Carex*. "Barren spikelets 1—2 on long stalks with obtuse scales, fertile 2—3 remote erect oblong stalked, the lower stalks about twice longer than the sheathing bracteas, upper ones included, glumes mucronate, fruit ovate triquetrous equally ribbed pellucidly punctate smooth or rough at the upper margins and at the edges of the narrow short bifid beak." — *Br. Fl.* p. 498. *Boott. E. B.* t 1234. *Host. Gram. Aust.* i. 57, t. 77? *Fl. Dan.* xiv. t. 2434.

In meadows and muddy or marshy ground near the sea; occasionally. *Fl.* May, June. *Fr.* July. 4.

E. Med. — Plentifully on the beach, where a small brook discharges itself into the sea, about half a mile W. of St. Catherine's point, 1842. [Near the quay at Brading, *A. G. More, Esq.*, Edrs.]

W. Med. — On a piece of moist ground near the shore in Gurnet bay. Creek of the Medina by Medham brickfield. Above the shore just beyond Norton going westward, sparingly. By the Yar below Freshwater bridge, and abundantly at Freshwater gate, especially in the second meadow from the shore. Plentifully in a damp meadow nearly in the line betwixt Tapnell and Wilmingham farms, 1844. In the bog at the source of the Yar, *D. Turner, Esq.*, B. T. W. (marsh at Easton).

Root creeping and densely tufted with whitish fibres, more so, I think, than in *C. fulva*, the whole plant in general larger and stouter. *Culms* erect, a foot to 2 or 2½ feet high, solid, bluntly triangular, smooth and shining throughout or without any perceptible roughness on or below the sheaths as in *C. fulva*. *Leaves* as in *C. fulva*, but I think somewhat less rigid, those on the stem rather longer and more lax. *Sheaths* in all respects similar to those of that species. *Staminate spike* quite like that of *C. fulva*, and often with a smaller or subsidiary one beneath it. *Pistillate spikes* usually 3, sometimes only 2, very remote, especially the lowermost; the highest, and indeed occasionally those beneath it, producing staminate florets in their upper part, usually, from the more numerous florets, more elongated than those of *C. fulva*, but in this respect very variable. *Glumes* very like those of *C. fulva* in shape, but much less acuminate, partly almost obtuse, partly submucronate, with a broader field of green on the back, and quite destitute

of the white membranous edging so conspicuous in that species. *Perigynes* when ripe, together with the glumes, nearly erect or imbricated, and hence more compressed on their inner face than in *C. fulva*, with several (7, *Leighton*) lateral and two prominent marginal ribs, the beak rather shorter and less slender than in *C. fulva*, and, like that, barbed with a few marginal spines; sometimes, it is said, smooth. *Nut* larger and longer than in *C. fulva*, with sharper angles and flatter faces, more attenuated at each end, and rather ovato-oblong than turbinate, tipped, as in that species, with the remains of the style.

This species, too closely approaching *C. fulva* to be really distinct, is perhaps a maritime form of that more inland plant, and is chiefly distinguished by having three instead of two pistillate spikes, by the fruit being nearly erect and usually more crowded or numerous; hence the pistillate spikes are somewhat more elongated. The absence of roughness on the stem, the somewhat shorter beak, not bordered and much less pointed glumes, smaller and differently shaped seed, are apparently constant marks of distinction.

22. *C. fulva*, Gooden. *Tawny Sedge*. "Sterile spikelets 1 or rarely 2, fertile ones oblong-oval distant, sheaths elongated shorter than the peduncles, bractæ foliaceous, fruit broadly ovate ascending glabrous ribbed acuminate into a straight rough-edged beak bifid at the point, glumes acute (not mucronate)." — *Br. Fl.* p. 497.

β. speirostachya, "Stem bluntly triangular smooth or scabrous near the summit, fertile spikelets on lower stalks, beak smoother with a more distant membranaceous orifice." — *Br. Fl.* p. 498. *C. speirostachya*, *Wahlenb.* (teste F. Boott in litt.), vide *Phytol.* i. p. 924. *Br. Fl.* p. 497. *E. B. S. t.* 2770. *Host. Gram. Aust.* iv. 53, t. 95? *Fl. Dan.* x. t. 1768? xiv. t. 2435, vi. t. 1049 (sub nomine *C. distans*).

β. only. In damp or marshy meadows and pastures, as well brackish as fresh often in great plenty, and mostly towards the coast. *Fl. June.* 24.

E. Med. — Near Briddlesford heath, 1841.

W. Med. — On the boggy ground at the upper end of Colwell heath, in great plenty. In the marsh-meadows at Easton, near Freshwater, abundantly.

β. *Root* creeping, with copious whitish branched fibres, and emitting leafy or barren suckers. *Culms* slender, erect or a little ascending, 12—20 inches high, solid, bluntly triangular below, more acutely so above, and roughish for a short distance beneath each sheath, which is not the case in *C. distans*, otherwise smooth as in that. *Leaves* very much shorter than the culm and principally at its base, linear, spreading, stiffish, rough at the edges and keel, channelled above, acutely keeled beneath, more or less recurved, those higher on the stem very distant, few (1 or 2), short, flat and erect: the leaves of the barren or radical shoots are usually longer and narrower than either. *Staminate spike* terminal, mostly solitary; sometimes there is a smaller one a little beneath it. *Pistillate spikes* 2 or more rarely 3, erect, the upper one 3 or 4 inches from that beneath it, the third when present still more distant from the second, on smooth slender stalks, exceeding, but in very variable degrees, the rather long, close, slightly rough sheaths, surmounted by the still longer upright leafy bracts, while, however, even that of the upper fertile spike, does not reach the summit of the barren one. *Glumes* ovate, acute or even acuminate, but not mucronate, greenish brown, with a green dorsal keel and a white scarious border, by which last mark they are best distinguished from the same part in *C. fulva*, *α.* *Perigynes* sessile, glabrous, greenish and partly tawny-brown when ripe, spreading or patent, ovoid or ovoid-elliptical, somewhat inflated, subtriquetrous, with several stout ribs and prominent lateral margins, which last are continued into a rather long and suddenly tapering straight beak, roughish on the edges, the apex slightly cloven. *Nut* pale brown, covered with minute elevated points only to be seen under a high magnifier, turbinate, trigonous; the angles rib-like, obtuse; the faces convex at the top, depressed below; the very obtuse apex tipped with the short base of the style.

Dr. Boott tells me (in litt.) that he inclines to the idea established, he finds, by

French authors, that the true *C. fulva*, Gooden. Trans. of Linn. Soc., is a sterile form of *C. speirostachya*. He says:—"I can find no ripe perigynia in *C. fulva*; and, independently of this, the characters distinguishing the two are shadowy. *C. fulva* as a sterile form develops its leaves and bracts more, and assumes a firmer habit and greener colour. *C. speirostachya* is the common plant and *C. fulva* rarer, but I have both from Yorkshire. I do not think Smith well distinguished them, judging from his herbarium." In another letter Dr. Boott observes:—"He (Goodenough) speaks of capsules, but says nothing of achenia. Smith says it is roundish, and that of *C. speirostachya* obovate; but I am sure that Sir James described *C. fulva* from specimens of *C. speirostachya*, judging from Beattie's specimens in herb. Sm.; and if you analyze his two descriptions you will find no real specific differences." Dr. B. finds, on comparing very numerous sets of specimens, the relative number of staminate and pistillate spikes to be nearly the same in both forms.

This species is very closely allied to *C. distans*, of which I cannot help suspecting the latter may be only a maritime variety.

23. *C. binervis*, Sm. *Green-ribbed Sedge*. "Barren spikelet solitary with obtuse scales, fertile 3—5, the upper ones sometimes subapproximate, the lower remote erect cylindrical often elongated bearing barren flowers in their upper half and some of them occasionally compound at the base, the lower stalks longer than the sheathing bracteas, glumes mucronate, fruit ovato-triquetrous with a smooth rather broad bifid beak and two principal green submarginal nerves on the outer surface, beak broad bifid."—*Br. Fl.* p. 499. *Boott. E. B. t.* 1235.

In dry woods and on heaths; not uncommon. *Fl.* May, June. *Fr.* July. 24.

E. Med.—Plentiful in a wood called New copse, between Ryde and Wootton bridge, 1838. Common at Apse castle, in the dell called Tinker's Hole. On Briddlesford heath. Plentiful on Bleak down. Bog at Blackpan, *Dr. Bell-Salter!*

Root like that of *C. lævigata*, knotty, fibrous and creeping. *Culm* as in that and about the same length, rough, too, like it, beneath the sterile spike. *Leaves* scarcely above half the width of those of *C. lævigata* and much longer, of a deeper green, much shorter than the culm, rigid, erect, sharply keeled and channelled, gradually tapering into long, rough and very acute points. *Sheaths*, as in the next, shorter than the peduncles, close and smooth. *Spikes* shorter and much less remote than in *C. lævigata*, the upper fertile ones in particular subapproximate, with respect to one another as well as to the solitary sterile one. *Staminate spike* solitary, terminal, erect, blunt, triquetrous, acute, often a little compound at the base, and that sometimes with the addition of a few fertile flowers; its glumes broadly ovate, rounded, sometimes with a short mucro, fuscous, with a green or whitish keel bordered with dark brown, sometimes of a uniform light brown or fuscous colour, the lowermost glume very large and supplying the place of a bract. *Anthers* straw-yellow, their tips spinulose or bristly, much more so than in the next. *Pistillate spikes* 3 or 4, frequently a little compound at the base, which is rarely if ever the case in *C. lævigata*, and sometimes bearing a few sterile florets at their summit, the two uppermost usually approximate to each other and to the sterile spike, the third at some distance beneath them, the fourth when present very remote; at first, as in *C. lævigata*, slender and erect, at length, as in that species, becoming lax, drooping or pendulous; their peduncles, as in *C. lævigata*, smooth and filiform, but rather shorter, the two upper, as in this last, much abbreviated. *Glumes* similar to those of the barren spike in colour, but more ovate or less rounded, ending for the most part in spinulose points, of various lengths on the same spike, often obsolete or quite wanting, always shorter than in *C. lævigata*, in which the entire glumes are more attenuated upwards, the spikes themselves being much longer and slenderer in proportion than in the present

species. *Bracts* long, leafy, like those of *C. lævigata*, but that beneath the uppermost fertile spike is glumaceous and very short. *Perigynæ* like that of *C. lævigata*, but rather smaller and much less spreading or more erect on the much smaller and shorter spikes, far darker coloured, chestnut-brown rather than tawny-green, ovate, with a short less deeply cleft beak, the points being less attenuated, the outer or convex face more distinctly angular or gibbous, with more acute lateral margins, near which last, as in *C. lævigata*, runs a strong green rib continued into the beak, before joining which it becomes very prominent, and like the beak itself often beset with a few spines. *Nut* as to size, shape and colour, in no respect different from that of *C. lævigata*.

It is not without some little hesitation that I insert this as the *C. binervis* of Smith, as my plant does not quite agree with his description. The fertile spikes are stated to be blackish, the two lowermost not above two or three inches asunder, and the beak short and broad; instead of which, in my specimens, the fertile spikes are green, the scales fuscous, with the central green rib edged with white, but it may perhaps turn dark when the fruit is mature. The spikes in my specimens are quite simple and very remote; the scales of the pistillate ones are much more acuminate and mucronate than in *E. B.*, but in all other respects our plant perfectly agrees with the figure, the two green nerves being very distinctly marked.

There is unquestionably a close affinity between *C. lævigata* and *C. binervis*,* which last connects as it were the former with *C. distans* and *C. fulva*. The most striking and obvious distinction in *C. lævigata*, and which can never be overlooked, is the great breadth and comparative shortness of its leaves, after which the pale tawny mostly acute scales of its sterile spike, the greater remoteness of the fertile from the barren spikes and of these last from one another, their more elongated form, more acuminate differently coloured glumes, and longer more drooping peduncles; the rarely compound state of either the sterile or fertile spikes, together with the differences in the perigynæ, will enable the student to distinguish between it and *C. binervis* beyond the possibility of confounding the two.

24. *C. lævigata*, Sm. *Smooth-stalked Beaked Sedge*. "Fertile spikelets remote erect or drooping cylindrical stalked, stalks longer than the elongated sheaths, bractæas foliaceous, all the glumes acuminate or mucronate, fruit ovate triangular striated with a rather long acuminate beak deeply bifid at the point." — *Br. Fl.* p. 499. *E. B.* xx. t. 1387. *Sm. Linn. Trans.* v. p. 272. *Schk. Car.* t. B. bb. No. 116.

In bogs, marshes, moist woods, thickets and meadows; very frequent with us. *Fl.* May, June. *Fr.* July. 24.

E. Med.—In a little piece of boggy ground by the roadside on the left hand a few hundred yards before coming to Ninham farm from Ryde, 1838. Very common in several parts of Sandown level, and in moist woods and pastures between Apse and Ninham farms, 1839. In a low marshy spot at Apse castle, sparingly but very tall, 1849. In a very wet boggy copse close adjoining to Prestwood, near Ryde, 1849. Apse-heath withy-bed. Extremely common in damp boggy

* *C. binervis* and *C. lævigata* are often found growing together in this island, the latter most abundantly in very wet, the former in drier, situations, as heaths, &c., but, like its congener, *C. binervis*, may be successfully sought for in the wettest thicket or morass, and *C. lævigata* in comparatively dry places. In their flowering time there is a considerable difference, *C. binervis* being for the most part far advanced before *C. lævigata* begins to bloom, which is commonly not until the latter end of May; whereas the other is seen in flower early in that month, or even at the close of April. This difference in the flowering time is inherent, and not dependent upon situation, since the same order is observed by the two plants when growing together under precisely similar circumstances.

woods about Newchurch, as in the Parsonage lynch, &c. In low pastures about Newchurch, towards Hill farm, &c., 1846. Alverstton lynch. Wet parts of Bordwood copse, abundantly. Bleak down. New copse, in very great abundance, 1840. Briddlesford copse, in abundance. In a marshy wood less than half a mile S.W. of Combley farm, 1844. On a piece of marshy land close to Little Duxmore, 1844. Very abundant in a marshy slip of ground skirting the arable land, and between that and the grazing-fields just beyond the northern end of the willow-bed E. of Bagwich farm, 1845. Wood between Ryde and Newport, D. Turner, Esq., B. T. W.

W. Med.—Common about Calbourne mill, and between it and Newbridge.

Root thick, creeping, reddish or blackish externally, knotty or tuberous, emitting many stout fibres and sending up leafy suckers. *Culms* several, erect or ascending, from about a foot to 2 feet high, solid, rather bluntly triangular, smooth excepting between the uppermost fertile spike and the terminal barren one, where it is furrowed, acutely angular and scabrous, with minute very sharp prickles pointing upwards, invested below with a few short, brownish, acute, scale-like sheaths, and the withered leaves of the former year, those of the current season clothing the greater part of the remaining portion. *Leaves* much shorter than the culm (in fruit), bright grass-green, slightly paler only beneath, firm, erect, more or less recurved, finely pointed and tapering, strongly and acutely keeled, channelled and striated, rough-edged only near their tips, those at the root often of considerable length, those of the stem and radical suckers short in comparison, 5 or 6 lines in breadth. *Sheaths* elongated, shorter than the peduncles, the uppermost smooth, close and striated, those of the lower stem-leaves rather loose, white, membranous, strongly ribbed and reticulated. *Bracts* foliaceous, rough-edged, the lowermost distinguishable only by its greater length from the stem-leaf nearest it, those succeeding far narrower, the uppermost being quite subulate. *Staminate spike* solitary, terminal, erect, acute, slender and triquetrous, $1\frac{1}{2}$ inch to $2\frac{1}{2}$ inches long, its glumes for the most part acute, particularly towards the summit, tawny-brown, with a green broad keel, mostly produced into a point or mucro, but which is wanting in some of the glumes, which are to be found both pointed and obtuse or rounded on the same spike: sometimes all the glumes are obtuse, with very pale keels, and are not to be distinguished by their shape from *C. binervis*. *Anthems* yellow, their pellucid tips beset with spinulose points. *Pistillate spikes* 2 or 3, remote from the staminate one, erect, pale green and very slender when in flower, more or less pendulous as fructification advances, on filiform smooth peduncles, always much exceeding the sheaths and still more elongated in fruit, in which state they are about twice as long as the sheaths. *Glumes* in the early flowering state pale silvery green, ovato-lanceolate, with long, spinulose, edged points. *Stigmas* 3, spreading. *Perigynae* longer than the glumes, smooth, tawny-green when ripe, ovate, tumid and more or less triquetrous, the angles very obtuse and often hardly discernible, with several more obscure facial ribs and one very strong, greenish and double rib on each side, not always marginal, running up into the long, flat, but not very narrow, deeply cleft beak, the points of which are rough, with a few small spines sometimes extending lower than the bifurcation. *Nut* filling a great portion of the cavity, turbinate, acutely triquetrous, finely striato-punctate, greenish or yellowish, tipped with the base of the style.

I have found this species near Ryde subdioecious, a few specimens producing a solitary, terminal, staminate spike, unaccompanied by any pistillate ones beneath it. It is a later-flowering plant than *C. binervis*, scarcely coming into blossom till quite the latter end of May. Mr. Leighton's figures of this species are excellent.

25. *C. pallescens*, L. *Pale Sedge*. "Barren spikelet 1 sessile, fertile spikelets pedunculated oblong-cylindrical approximate scarcely pendulous much longer than the very short sheaths, bractæas foliaceous, fruit obovato-elliptical tumid striated obtuse glabrous."—*Br. Fl.* p. 497. *E. B.* t. 2185. *Host. Gram. Aust. i.* 55, t. 74.

In moist woods, meadows, &c. *Fl.* May, June. 24.

E. Med.—Plentiful in the drier and more open parts of New copse, near Wootton bridge. Abundantly in Dunnage copse, not far from Briddlesford farm, 1841. Stroud wood, between Aldermoor mill and Coppid hall, 1841. A few specimens found in a wood near Apley, *Mr. Thos. Meehan*, 1845!!

Root tufted, with numerous whitish or brownish fibres, scarcely at all creeping. *Culms* erect, 1—2 feet high, slender, acutely triangular, striated, roughish only just towards the summit, leafy for about $\frac{1}{3}$ rd of its length, either quite naked from thence to the top or with a solitary remote leaf at $\frac{3}{4}$ ths of the entire height, when fully grown much exceeding the leaves in length. *Leaves* grass-green, the lowermost one on the stem very short, those above lengthening as they rise, the upper ones and those of the barren shoots long, narrow, tapering, grooved and spreading or recurved; their close, pale and ribbed *sheaths* downy with short spreading hairs, that partially clothe the inferior leaves, the superior being usually quite glabrous. *Bracts* leafy, erect, with hardly any sheaths, the lowermost largest and overtopping the spikes, that of the staminate spike very minute, with scarioso sheathing edges: in all the numerous specimens before me the bracts are plaited or puckered at the back just above their very short sheaths. *Staminate spike* solitary (rarely 2), terminal, erect, about $\frac{1}{2}$ an inch long, linear and triquetrous. *Pistillate spikes* 2 or 3, the two highest approximate, the uppermost one on a very short stalk or even nearly sessile, the third when present usually very remote and on a much longer very slender peduncle; all when in fruit oblongo-cylindrical, obtuse, pale green, scarcely more than $\frac{1}{2}$ an inch long, finally drooping; their *scales* broadly ovato-acuminate, much shorter than the fruit, pale greenish dashed with tawny-brown, shining and silvery on the edges, the midrib green on both sides. *Perigynæ* sessile, pale green, shining and quite glabrous, ovato-oblong, obscurely trigonate, many-ribbed and very obtuse, tipped with a minute, very abrupt, blackish and entire point. *Nut* turbinate, bluntly triangular and 3-ribbed, tipped with the permanent base of the style.

26. *C. panicea*, L. *Pink-leaved Sedge*. "Barren spikelet solitary, fertile ones about 2 subcylindrical lax-flowered distant stalked, the stalks longer than the close elongated sheaths, bractes leafy, fruit subglobose somewhat inflated obtuse glabrous with a short terete truncate beak."—*Br. Fl.* p. 499. *E. B. t.* 1505. *Host. Gram. Aust.* i. 59, t. 79 (optima).

β. Fruit more oblong or elliptical and pointed.

In watery boggy places on heaths and commons. *Fl.* April, May. 24.

E. Med.—Wet places on the skirts of Lake common. Plentiful on most parts of Bleak down, 1842. On Wootton common, plentifully. Marsh-meadow near the upper end of Brading harbour, near the sluice, abundant. On a piece of wet land close to Little Duxmore, 1844.

W. Med.—Abundant in the marsh at Easton, 1845.

β. On the bog upon Colwell heath, 1844.

Perigynæ as long as or mostly a little longer than the glumes, sometimes considerably so, erecto-patent, lower ones a little remote; greenish brown or at length blackish, ovato-globose and inflated, obscurely triquetrous, minutely punctulato-striate, glabrous, with a strong, lateral, greenish rib, and several less apparent ones, terminating in the short, somewhat curved, entire and obliquely truncate apex. *Nut* obovate, subglobose, bluntly triquetrous, greenish brown, finely reticulato-striate, smooth and shining, tipped with the base of the style.

Very much resembling *C. glauca*, from which the elongated sheaths and upright instead of drooping fertile spikes afford a ready distinction.

"†† *Fertile spikes elongated.*"—*Bab. Man.*

27. *C. sylvatica*, Huds. *Pendulous-spiked Wood Sedge*. Stem solid, sheaths close about half the length of the flower-stalks,

spikes slender drooping their scales spinous, perigynæ triquetrous attenuated upwards into a long beak cloven at the point. *E. B.* t. 995. *Br. Fl.* p. 502. *Host. Gram. Aust.* i. 62, t. 84. *C. Drymeia*, *Ehrh.*: *Wahlenb. Fl. Suec.* ii. p. 600. *Lindl. Syn.*

In moist shady woods and groves; extremely common. *Fl.* April, May. 2.

E. Med.—In Quarr copse. Woods at Apley. St. John's and most other places about Ryde.

Root consisting, as in the following species, of reddish brown fibres, but, as it appears to me, more woody and creeping. *Culms* about as tall as *C. strigosa*, but filled with pith in the centre, not hollow as in that species. *Leaves* similar in all respects, but a little narrower. *Staminate spike* solitary; its *scales* like those of *C. strigosa*, but their edges are tawny rather than white, the central green rib furnished with several minute spines pointing upwards, a character very unusual in this genus, and I believe hitherto unnoticed. *Perigynæ* rather longer than in *C. strigosa* and much more ovate, triquetrous, with a strong nerve on each side near the margin of the two outer faces, suddenly tapering into a long deeply bifid beak, crowned with the three permanent styles.

The present species, though a native of Sweden, is confined to the southern parts of that country only.

28. *C. strigosa*, Huds. *Loose Pendulous Sedge*. Stems hollow, sheaths loose elongated nearly equal to the flower-stalks, spikes slender erect or inclining, styles deciduous.

"Barren spikelets solitary, fertile about 4 slender filiform loose-flowered nearly erect, the lower stalks a little longer than the elongated sheaths, upper about equal to their bractæas foliaceous, glumes elliptic-lanceolate diaphanous with a green keel, fruit oblong-lanceolate acuminate at both ends nerved slightly recurved truncated at the point, beak scarcely any, leaves rather broad."—*Br. Fl.* p. 502. *E. B.* t. 994. *Fl. Dan.* vii. t. 1237.

In groves and thickets. *Fl.* April, May. *Fr.* June, July. 2.

E. Med.—St. John's wood, sparingly, 1840. In the wood nearest the sea, skirting the marsh-meadows behind the Dover, abundantly,* 1843 (Monkton Mead wood?). In a wood by Little Smallbrook farm, near Ryde, 1840. Profusely at the N. end of Smallbrook-heath copse, on the left side of Rosemary lane going towards Aldermoor heath, being the last wood before arriving at the gate across the road at the entrance of the heath, some specimens found having the pistillate spikes compound at the base, 1844. It quite covers the ground by a wet plash or pool in the copse, requiring a moister soil than *C. sylvatica*. Abundantly in a moist copse a little S.W. of Combley farm; also found here with compound pistillate spikes. [In the little wood between Smallbrook and Prestwood, through which passes the footpath from Ryde to Brading, abundantly, *Dr. Bell-Salter*, Edrs.]

W. Med.—In a wood between Swainston and Five Houses, but not observed in any great abundance, being confined to one spot only, 1845.

Closely resembling the preceding species. *Root* of many pale reddish fibres. *Culms* numerous, ascending, hollow, a foot or 18 inches high, forming a dense tufted herbage, bluntly 3-cornered. *Leaves* numerous, sheathing, bright grass-green, exactly like those of *C. sylvatica*, but rather broader, with somewhat shorter

* [This station is now thrown open by the new road just made (1855) at St. John's by Sir John Simeon. On going up the hill it may be observed in great abundance on the right-hand side, about 20 yards from the commencement of the wood, *Dr. Bell-Salter*, Edrs.]

and looser sheaths. *Bractes* long, leafy. *Staminate spike* solitary, $1\frac{1}{2}$ inch or 2 inches long, terminal, erect, linear, acute; its *scales* ovato-lanceolate, acuminate, pale green, with a central rib and edged with silvery white, their margins folded so as to make them appear narrower than they really are: under a very moderate magnifier these scales appear to have three ribs, but this is solely owing to the deepening of the green colour adjacent to the white membranous border, as a lens of higher power discovers no such structure. *Pistillate spikes* about 5, erect or inclining, $2\frac{1}{2}$ inches long, slender, often bearing staminate florets at their extremity, and sometimes a little compound at the base; on slender pedicels, but little if at all exceeding the top of the somewhat loose sheath, whose bifurcation is filled up by a thin 2-lobed prolongation of the ligule, much more conspicuously than in *C. sylvatica*. *Florets* loosely imbricated; their *scales* like those of the staminate spikes, but shorter and greener. *Stigmas* 3. *Perigyne* very different from that of *C. sylvatica*, ovato-lanceolate, triquetrous, with one or two strong ribs down its two outer faces, tapering into an abrupt nearly entire point.

29. *C. pendula*, Huds. *Great Pendulous Sedge*. "Barren spikelets solitary, fertile 4—6 cylindrical densely flowered very long and drooping, sheaths nearly equal to the stalks, lower elongated, upper very short, glumes ovato-mucronate, fruit ovate with a short trigonous notched beak, leaves broad." — *Br. Fl.* p. 502. *E. B. t.* 2315. *Host. Gram. Aust.* i. 73, t. 100 (optima).

In moist woods, and on wet slipped land along the coast; not rare. *Fl.* April—June. *Fr.* July, August. 4.

E. Med. — In the ravine along the stream below the garden of the Shanklin (Williams's) hotel, and in the same gully near the church, 1844. Common in Shanklin chine. Woods between Shanklin and Ventnor. Woods near Norris castle, and especially in Buckett's copse, in the greatest profusion. Hungerberry copse, frequent, 1849. Profusely in the boggy parts of the copse at the mouth of the Wootton river on the W. shore, 1845. Wood on the West side of the river below Wootton bridge, sparingly, 1845. In Marina copse, by the sea-shore near St. Clare, in plenty, 1850, *Dr. Bell-Salter*.

W. Med. — Abundantly in copses between Gurnet and Thorness bays, 1846. Frequent along the shore near W. Cowes, towards Gurnet bay. By Sheat farm, in great profusion.

By far the largest, and one of the handsomest, of British Sedges, conspicuous for its long-stalked and elegantly drooping spikes. From 2—6 feet high. *Root* fibrous, tufted, (*Sm.*) *Culms* erect, slender for the size of the plant, triquetrous, the angles sharpish, intermediate faces channelled, smooth excepting between the two or three uppermost sheaths, where it is slightly scabrous. *Leaves* often 2 feet long, $\frac{3}{4}$ ths of an inch or more broad, bright grass-green above, pale and glaucous beneath, their deflexed edges rough towards the point, as is the very sharp and prominent keel, and terminating in long, close, sheathing bases. *Ligule* ovate, of the upper leaves ovato-lanceolate, soldered to the leaf throughout, their edges alone free. *Sheaths* very long, fitting loosely round the culm, their leafy bractes in all respects like the leaves themselves. *Spikes* very long, slender and obtuse, on stalks about the length of the sheaths, those of the lowermost a little longer, drooping or pendulous. *Staminate spike* solitary, 3—5 inches long, thickening gradually towards its extremity, triquetrous; its *scales* linear-lanceolate, acute, thin and membranous, reddish brown with a pale dorsal rib. *Anthers* yellow. *Pistillate spikes* 6 or 7, cylindrical, 5 or 6 inches long; their *scales* like those of the staminate spike, but with darker edges when in fruit, appearing much broader from their expansion. *Florets* of both very numerous, densely imbricated. *Perigyne* sessile, spreading, ovate, very bluntly and obscurely triangular, a little inflated, ribbed and greenish towards the point, suddenly tapering into a short, abrupt, brownish and entire beak, easily detached from the rachis, when ripe, by a slight rub.

The original name, given to this species by Ehrhart, of *C. Drymeia*, although

having a just claim to preference on the score of priority, is nevertheless inadmissible, as being of Greek derivation.

30. *C. Pseudo-cyperus*, L. *Bastard Cyperus Sedge*. "Barren spikelets solitary, fertile 3—6 densely flowered cylindrical upon long foot-stalks drooping, bracteas very leafy, lowermost sometimes sheathing, the others without sheaths, glumes setaceous scabrous, fruit oblong very much acuminate ribbed, beak long deeply cloven." — *Br. Fl.* p. 502. *E. B.* t. 242. *Host. Gram. Aust.* i. 63, t. 85 (bona).

In wet swampy thickets, and by the margins of pools and ditches, &c.; not very common. *Fl.* May, June. 24.

E. Med.—A single tuft in Quarr copse, 1844. Marsh-ditch between Yarbridge and Yaverland, under a copse, in some plenty, 1840. In ditches nearly at the back of Lower Morton farm, 1843. In a pond between Wootton bridge and King's quay. Boggy spots by the little stream that descends to the sea between Niton and Blackgang, in some abundance, particularly in a swampy tract of ground, partly enclosed by a stone fence, near the shore, in great plenty, and growing in large clumps, 1841. In a wood near Little Smallbrook farm, about a mile from Ryde, *Rev. G. E. Smith*, 1838 !!!

W. Med.—In one or two places in the marsh at Freshwater gate, 1839.

A large and beautiful species, known at once from all our other Sedges by the very long, extremely slender, almost acicular glumes both of the barren and fertile spikes. Root tufted, with many stout fibres. Culms numerous, erect, leafy, 2—3 feet high, solid, sharply triquetrous, with depressed faces, the angles peculiarly acute and rough for some distance below the summits. Leaves numerous, bright grass-green, scarcely if at all paler beneath, sharply keeled and channelled, striated, the longitudinal intercellular spaces* jointed, with numerous transverse septa; whitish and often filamentous at the base, with thin membranous edges, very rough above on the margins and keel, and capable of cutting severely incautiously handled; those at the root very long and generally withered; lower stem-leaves very short, but lengthening as they rise, the upper ones greatly overtopping the culm; all with long, close, smooth sheaths, that are remarkably membranous and transparent at the back,† except that of the uppermost stem-leaf, which is of the same texture all round, and often extremely shortened; those of the very long leafy bracts nearly or quite obsolete. Spikes at first erect or inclining, afterwards drooping and pendulous, on very long, filiform, compressed, green-ribbed and scabrous peduncles; very slender, acute, linear and triquetrous in flower, in which early state the anthers chiefly distinguish solitary and terminal staminate from the three, four or five rather paler or greener pistillate spikes, the lowermost of which is usually considerably remote from the rest and on a much longer stalk, subtended by a far longer and broader bract overtopping all those above it; when in fruit the pistillate spikes become much thicker, cylindrical, obtuse and pendulous. Glumes of the staminate and pistillate spikes nearly similar, erect; those of the former with pale tawny membranous margins, reaching to above half their length, and tapering off into the long, very slender, subulate, spinous points; those of the latter narrower, pale green, with extremely slender, acicular, very rough points; their basal margins short, white and scarcely tapering; sometimes the glumes of all the spikes are pale green. Anthers pale yellow, with simply acute (not spinous) points. Perigynes yellowish when ripe, quite smooth, densely crowded into cylindrical, elegantly drooping, bristly spikes, stipitate, spreading horizontally, ovato-lanceolate, subtriquetrous, convex and a little inflated at the back, strongly

* Air-cells? These spaces, which are quite empty, separate the longitudinal bundle of vessels destined to transmit the natural juices of the leaf.

† From a prolongation of the membranous adnate ligule, in that part unaccompanied by the common leafy tissue.

and deeply many-ribbed, the marginal rib on each side stouter, darker and more prominent, continued into the moderately long rather broad beak, that is cloven with slender, acute, slightly spreading points, sometimes armed, as is the beak itself, with a few remote spinules. *Nut* nearly filling the cavity, pale yellow, ovato-elliptical, triquetrous, finely punctate, tipped with the style.

"** *Fruit downy or hairy*."—Bab. Man.

31. *C. præcox*, Jacq. *Vernal Sedge*. "Barren spikelet solitary, fertile 1—3 oblong approximate sessile or the length of the sheath, lowermost sheath short (scarcely any), lower bracteas leafy short, glumes broadly ovato-acuminate, fruit downy obovato-oblong scarcely acuminate truncated at the point trigonous the sides nearly flat, root creeping."—*Br. Fl.* p. 503. *E. B. t.* 1099. *Jacq. Fl. Aust.* v. 23 t. 446 (bona). *Host. Gram. Aust.* i. 51, t. 68, (melior).

In dry meadows and pastures; frequent. *Fl.* April, May. 24.

E. Med.—On the Dover, Ryde, sparingly, 1842. Field by the short cut between Oakfield and the Brading road.

W. Med.—Plentiful on the downs betwixt Calbourne and Brixton, 1846. On the sandy heaths betwixt Shorwell and Kingston, abundantly, 1846.

A small species, usually but a few inches high, but conspicuous at the latter end of April and in May by its bright yellow anthers. *Root* fibrous, creeping with long jointed runners. *Culm* erect or a little ascending at the base, from 3 or 4 to 6 or 8 inches or even a foot in height, slender, pale green, quite smooth and glabrous, except a slight roughness just below the summit, bluntly triquetrous, one of the faces often flatter than the rest, naked excepting at the bottom, where it is sheathed by a few leaves. *Leaves* numerous, tufted, mostly shorter than the culm, and chiefly at and near the base of the latter, bright grass-green, glabrous, firm and somewhat rigid, taper-pointed, flattish, prominently and acutely keeled beneath, rough at their more or less spreading or recurved extremities, very narrow, not much above a line in breadth. *Bracts* small, erect, the lowermost foliaceous, with a short close *sheath*, about the length of the flower-stalk. *Staminate spike* solitary, terminal, longer than the pistillate, elliptical or when in flower obtuse and clavate; its *glumes* oblong-elliptical. *Anthers* bright straw-yellow, linear, not apiculated. *Pistillate spikes* about two immediately below the staminate, close together, sometimes with a distant one near the base of the culm on a long stalk; their *scales* darker, more ovate, and with longer points than in the staminate spikes, and having mostly a few barren florets at their summits.

32. *C. pilulifera*, L. *Round-headed Sedge*. Sheaths none, bracteas small subfoliaceous, fertile spikes sessile roundish approximate, their scales mucronate, fruit ovato-globose pointed downy, stem weak. *E. B. t.* 885. *Br. Fl.* p. 504. *Host. Gram. Aust.* iv. 47, t. 84. *C. montana*, L. *C. filiformis*, *Fl. Dan.* t. 1048.

In moist woods and heathy places; rare? *Fl.* April, May. 24.

E. Med.—Plentiful in New copse, between Ryde and Wootton bridge, 1840. Common on the turf-walks at Apse castle, 1841. On Lake common.

Root of many brown shaggy fibres, scarcely creeping, but forming dense tufts, from which the culms spread in a circular form to a foot or 18 inches in diameter. *Culms* 6 inches to upwards of a foot in height, extremely weak and slender, curved and inclining, triangular, a little rough towards the summit only. *Leaves* numerous, shorter than the culm (except the persistent ones of the preceding year), bright grass-green, about $\frac{1}{4}$ th of an inch wide, rough on their edges, with long taper points, weak and flexible. *Bracts* subulate, stiffish, the lowermost longer,

the upper ones shorter than the spikes they subtend, without sheaths. *Staminate spike* not an inch long, solitary, erect, linear, pointed and triangular; its *scales* lanceolate, acute, tawny, with whitish membranous edges and a sharp green keel. *Pistillate spikes* 2—4, quite sessile, in a cluster at the base of the barren one, the lowermost, when more than two are present, a little remote from the rest, roundish when in seed, from whence, and not from the form of the fruit, the rather inapplicable name of *pillulifera* is derived. *Scales* broadly ovate, very sharply pointed, their keel much broader and greener than in the staminate spike, a little exceeding the fruit in length. *Perigynæ* roundish ovate, somewhat inflated, downy, of a green colour, and tapering into a short brown beak entire at the point. *Nut* yellowish, globose, a little pointed, finely punctate.

“v. *Terminal spikes barren, 2 or more; stigmas 3.*

“* *Fruit downy.*”—Bab. Man.

33. *C. glauca*, Scop. *Glaucous Sedge*. “Barren spikelets 1—3, fertile 2—3 cylindrical or ovate at length drooping densely flowered on long slender stalks, sheaths short scarcely any, bractæas foliaceous, glumes ovate, fruit obovato-globose scabrous or smooth, beak very short entire.”—*Br. Fl.* p. 502. *C. recurva*, *Huds.*: *Sm. E. B. t.* 1506. *C. flacca*, *Retz.*: *Host. Gram. Aust.* i. 66, t. 90.

A prevailing and abundant species in moist woods, meadows, pastures and hedges. *Fl.* April—June. *Fr.* June, July. 24.

In Quarr copse, and everywhere else about Ryde, plentiful.

Perigynæ dark purplish brown, almost black when ripe, obovate, very obtuse, almost globose, rough with minute warty granulations or shagreened, greenish towards the apex, where it suddenly terminates in a short, truncate, nearly entire point. *Nut* triquetrous, punctato-striate, with a flat apex.

In two specimens of *C. glauca* I found the summit of one of their fertile spikes; in the first a diandrous male floret, each of whose filaments was tipped with a double erect anther; on the other spike was a monandrous floret, with the filament cleft and bearing a single erect anther on each fork.

It is singular that this very common European species, which does not appear to be rare in Sweden, should have been overlooked and undescribed by Linnæus.

34. *C. hirta*, L. *Hairy Sedge*. “Hairy, barren spikelets 2—3, fertile 2—3 distant stalked nearly erect cylindrical, sheaths elongated, bractæas long foliaceous, glumes elliptic-lanceolate much acuminate ciliate towards the point, fruit oblong-ovate with a long beak deeply bifid at the point.”—*Br. Fl.* p. 505. *E. B. t.* 685. *Host. Gram. Aust.* i. 71, t. 96 (præstantior).

β. Pistillate spikes compound at the base.

In moist woods, meadows, marshes, and by ditchbanks; frequent. *Fl.* May, June. *Fr.* July. 24.

E. Med.—About Ryde, not uncommon. Sandown marshes, Bonchurch. Meadows between French mill and Bobberstone. Very fine and abundant on the edge of the little pool near the pheasantry, Steephill, 1845. Common in moist meadows about Newchurch. Meadow at Yarbridge, abundantly.

W. Med.—In the Cyperus meadow at Apes down, abundantly. Common along the course of the stream from Calbourne to Newbridge. In some swampy meadows a little above Newbridge towards Westover, abundantly, 1844. Plentiful in the marsh at Easton, 1845. Banks in Totland bay, *B. T. W.*

β. By the stream-side just above Calbourne mill, 1840.

Easily known by its copious hoary pubescence, and the very long tapering glumes of the pistillate spikes, which are pale green, with a transparent membra-

nous border, and finely serrated upwards. *Root* almost woody, creeping extensively with long, white, sharp-pointed runners and copious fibres. *Culms* erect, a foot to 2 feet in height, with three blunt angles, very smooth and shining, leafy. *Leaves* nearly erect, rather narrow, flattish and taper-pointed, more or less hoary with fine downy hairs, which are most copious on the summit of the moderately long, close and shining sheaths on the side opposite to the leaf, the inferior portion of the *sheaths* themselves being in my specimens quite glabrous. *Ligule* short, rounded, very hairy. *Bracts* like the leaves, the lower ones very long. *Staminate spikes* 2 or 3, lanceolate, erect, obscurely triquetrous, the lowermost on a very short stalk, the other two sessile, the terminal one often a little compound at the base; their *scales* ovate, brownish red, with broad white edges and green keel, hoary with thick down. *Anthers* buff-coloured. *Pistillate spikes* likewise 2 or 3, on stalks of variable length, equalling or considerably exceeding the sheaths, erect, slender in flower, in fruit broader and more cylindrical; their *scales* paler, more tapering and far less hairy than in the staminate spikes, with very long serrated points. *Stigmas* 3. *Perigyne* stalked, ovate, plano-convex, strongly ribbed, densely downy, the beak deeply cleft into two slightly spreading rough points, with the persistent styles between them. *Nut* brownish, 3-cornered, roundish ovate, striato-punctate, tipped with a part of the style, loosely invested with the perigyne.

“** *Fruit glabrous.*”—Bab. Man.

35. *C. ampullacea*, Gooden. *Slender-beaked Bottle Sedge*. “Barren spikelets 2—3, fertile 2—3 distant shortly stalked cylindrical erect, sheaths none (very short or nearly wanting, *Bromf.*), bractæ foliaceous, glumes lanceolate about half as long as the fruit, fruit crowded somewhat membranaceous subglobose inflated striated suddenly contracted into a long narrow beak bifid at the point, stem bluntly triangular.” — *Br. Fl.* p. 506. *E. B.* t. 780. *Schk. Car.* i. p. 125, t. Tt. fig. 107. *Fl. Dan.* xiii. t. 1248? *Host. Gram. Aust.* i. 73, t. 99 (a broad-leaved form).

In ditches and wet boggy ground; not common. *Fl.* April, May. *Fr.* June.

24. *E. Med.*—Ditch in Sandown level, and on the skirts of Lake common, very abundantly, 1839; also about the skirts of Lake common, in several places. At the foot of the Parsonage lynch, Newchurch, as also in several ditches by that village, abundantly, 1840. By a drain on Apse heath, close to the withy-bed, 1840. Abundant in various places in the boggy meadows between Cridmore and Appleford, about the Wilderness and between it and Rookley, &c., 1842.

W. Med.—In several parts of the marsh at Freshwater gate, 1841.

Plant perfectly glabrous throughout. *Root* white, slender, creeping, with numerous pale slender fibres. *Culms* from about a foot to 2 feet high, erect, slender, pale yellowish green, smooth and shining, naked for some distance downwards, very obtusely trigonous, except sometimes immediately under the lowermost sheath, the interangular faces rounded and striated, quite glabrous up to the sheath of the lowermost bract, beyond that with one of the faces flattened and channelled by the stalks of the pistillate spikes, the edges of the groove acute and roughish. *Leaves* several, erect, very long and narrow, about a line to 2½ lines in breadth or even sometimes less, firm and rigid, dark green at the back, glaucous above, finely ribbed and strongly channelled or concave, closely sheathing the culm with their white membranous bases, acutely keeled and rough both there and on the edge of their very finely tapering points, of which those of the superior leaves overtop the culm. *Bracts* foliaceous, those of the pistillate spikes exactly like the leaves, erect; of the lowermost spike and that next above it longer than the culm; of the third or uppermost spike, when that is present, far shorter than the rest: of the staminate spikes the undermost alone is subtended by a

slender subulate bract, which is usually about its own length, and of which the remaining spikes are quite destitute. *Sheaths* for the most part extremely short or nearly wanting, but the lowest pistillate spike is often furnished with a very evident one, $\frac{1}{2}$ an inch or more long. *Staminate spikes* mostly 3, sometimes 2, rarely 4, erect, subapproximate, $1-1\frac{1}{2}$ inch long, very slender, triquetrous, acute (subclavate in flower), sessile, the lowermost sometimes shortly stalked. *Glumes* oblongo-lanceolate, more or less acute or pointed, purplish brown, with green slightly keeled backs. *Anthers* linear, yellow, abrupt at the summit, not apiculate. *Pistillate spikes* 2 or 3, mostly bearing staminate flowers at their summits, remote, sometimes sessile, more frequently on stalks from an inch to 3 or 4 inches long, slender, smooth, compressed, at first erect, but as the fruit advances becoming, from its weight, lax, nodding and even pendulous. *Glumes* as in the staminate spikes, but longer, paler, more acute and tapering. *Stigmas* 3, white, tapering and cylindrical. *Perigynes* stipitate, greenish yellow or tawny-brown, longer than the glumes, spreading nearly horizontally in several rows, forming a dense cylindrical spike, broadly ovoid or even subglobose, not triquetrous; much inflated, membranous, shining and glabrous, with several very slender inconspicuous ribs, the two lateral ones most evident, attenuated into a rather long and slender deeply cleft beak, the points of which are spreading. *Nut* small, not nearly filling the cavity, greenish brown, obovoid or obovoid-elliptical, trigonous, the angles paler and bluntish, finely striato-punctate, crowned with the long persistent style.

This species varies a good deal in the breadth and glaucous hue of the leaves.

36. *C. riparia*, Curt. *Greater Common Sedge*. "Barren spikelets 3—5 approximate, with acuminate glumes, anthers tipped with a short awn, fertile spikelets 3—4 broadly cylindrical acute sessile or the lower ones stalked, sheaths none, bracteas very long foliaceous, glumes oblong pointed, fruit oblong-ovate with a short beak." — *Br. Fl.* p. 507. *E. B.* t. 579. *C. crassa*, *Host. Gram. Aust.* i. 68, t. 93.

β. Spikes of either sex (the pistillate especially) more attenuate, on long slender stalks, pendulous; staminate spikes for the most part solitary, terminal, drooping, bearing pistillate flowers in the middle.

On the banks of rivers and ditches, also in marshes and wet meadows. *Fl.* April, May. 24.

Abundant in the marsh-ditches behind the Dover, Ryde; and in Centurion's copse. By the stream above Alverston mill, in great profusion and luxuriance.

β. On a piece of very wet salt-marsh under Chapel-corner copse, at the mouth of the Wootton river, in plenty, 1846.

The stoutest though not the tallest of our Carices. Two feet or more in height. *Root* thick and long, creeping extensively (*Sm.*) *Culm* erect, acutely triangular, the edges very sharp, rough near the top, smooth in the lower part. *Leaves* long, erect, about $\frac{1}{2}$ an inch wide, bright green and slightly glaucous above, very glaucous beneath, with a sharp keel and rough cutting edges, reticulated with transverse septa. *Bracts* like the leaves, lower ones long, overtopping the spikes, ending in close short sheaths, the uppermost very short and with scarcely any sheaths. *Staminate spikes* 3 or 4, clustered at the top of the culm, triquetrous and acute; their *scales* like those of the pistillate spikes; remarkable before flowering for their dark purple, almost black, appearance. *Anthers* yellow, awned. *Pistillate spikes* about the same number, remote, the lower ones on long, the upper on very short, stalks, or almost sessile; their *scales* with long points, serrated on the edges: the upper spikes are usually partly barren at their extremity. *Stigmas* 3, white. *Perigyne* ovate, sessile, strongly furrowed or ribbed, gradually tapering to a broad, short, deeply cleft beak.

37. *C. paludosa*, Gooden. *Lesser Common Sedge*. "Barren spikelets about 3, with obtuse glumes, anthers with a very minute point or pointless, fertile spikelets about 3 cylindrical obtuse erect, sheaths none, bracteas very long foliaceous, glumes narrow acuminate, fruit subcoriaceous oblong-ovate striated with a short usually bifid beak."—*Br. Fl.* p. 507. *E. B. t.* 807. *Host. Gram. Aust. i.* 68, t. 92. *C. acuta*, *Curt. Fl. Lond.* fasc. 4, t. 61. *Gooden. Trans. Linn. Soc. ii.* p. 202.

In wet meadows and ditches; not common with us. *Fl.* April, May. *Fr.* July. 24.

E. Med.—Plentifully intermixed with *C. riparia* by the stream-side above Alverstton mill, 1848; also in a wet meadow a little above the mill. In a moist meadow nearly opposite the stables and laundry at Steephill, in plenty, 1842. In a boggy spot on the skirts of Lake common, also along marsh-ditches by the roadside just before coming to Sandown village, plentifully, 1840.

W. Med.—Boggy meadows near the hotel at Freshwater gate, common. Abundantly by the water-courses just above Yafford mill, 1846. Frequent in wet meadows about Brixton; abundant in boggy meadows at Moor Town and all the way to Bottle Hole, in the wet willow-thickets.

Root creeping and stoloniferous. *Culm* erect, 1, 2, 3, or even 4 feet high, very sharply triangular and rough in the upper part, glaucous-green, the faces of the sides depressed and striated. *Leaves* erect, shorter than the culm, often as broad or nearly so as in *C. riparia*, at least in the more luxuriant specimens; bright green above, very glaucous beneath, and in every respect similar to the foregoing. *Bracts* leaf-like, the lowermost by far the largest and longest, a little overtopping the staminate spikes, the next one above usually about equal to or rather shorter than the spikes, the rest greatly smaller and shorter than the two lowermost, that of the terminal spike even obsolete. *Sheaths* none. *Staminate spikes* usually 3, with mostly the same number of pistillate ones, the former lanceolate and somewhat acute, but less tapered or elongated than in *C. riparia*, and hence by comparison blunter,* obtusely trigonous, the two superior approximate, the lowermost a little remote, all sessile, sometimes a little compound at bottom, the inferior and even the next above it with usually a few pistillate flowers at their base, erect or at most but slightly inclining when in flower, not nodding or almost drooping as in *C. riparia*. *Glumes* oblongo-elliptical, more or less obtuse or even rounded at summit, a few occasionally, and especially of the lowermost, somewhat acute, brownish purple, darkest towards their tips, with a green line or keel; viewed in the aggregate of the unopened spike they appear deep purple or blackish and shining, with a copper reflexion. *Stamens* similar to those of *C. riparia*, but the anthers are quite destitute of the subulate point or awn so conspicuous in that,† and which, though not noticed as a character in the description, has not been overlooked by Curtis in his admirable plates of these two species in *Fl. Londinensis*. *Pistillate spikes* about 2—2½ inches long, remote, subcylindrical, very slender and erect when in flower, mostly tipped with a few staminate flowers, and often compound or branched at base, the upper on very short stalks or nearly sessile, the lowermost on somewhat longer peduncles; their *glumes* very similar to those of *C. riparia*, ovato-oblong, dark purple brown, with a green keel or rib, those at or towards the base ending abruptly in long, sharp, serrate, scabrous points, of which those nearer the summit of the spike are gradually deprived, the highest being simply acuminate. *Styles* 3. *Perigynes* closely imbricated in about 6 or 8 rows, widely spreading, whitish brown, many-ribbed, smooth and

* This bluntness is most evident when the anthers are protruded; the spike has then a clavate outline.

† The connectivum merely terminates in an extremely short, minute and broad point, which is often obsolete or nearly so.

glabrous, shortly stipitate, about $1\frac{1}{2}$ line in length, ovate or ovato-elliptical, either rounded or tapering at base, subtrigonal, much compressed, with flattish margins, tapering at summit into a very short, cylindrical, slightly cloven or almost entire beak. *Nut* ovate, acutely trigonal, substipitate, chestnut-brown, the angles often paler; sometimes not perfected.

Readily distinguished from the preceding species by the obtuse scales of the staminate spikes, by its usually smaller size, narrower leaves, and in having the beak of the perigynae nearly entire. From *C. acuta* it is known by its larger size, in having constantly three stigmas, and broader, more tapering and more numerous staminate spikes.

Order LXXXVII. GRAMINEÆ, Juss.

"*Florets* usually perfect, sometimes imperfect, sometimes neuter (without either stamens or pistil), solitary, or 2 or more imbricated on a common axis or rachis contained within an involucre (*calyx*, L.) consisting of 2 (sometimes 1, rarely none) valves or *glumes*, the whole constituting a *locusta* or *spikelet*. *Perianth*? (*corolla*, L.) glumaceous: that of the fertile florets usually of 2 dissimilar *glumellas* (*paleas* or *valvelets*); lower or outer simple, usually keeled or with a midrib; inner or upper with 2 lateral or dorsal nerves (hence probably of 2 united); sometimes 1, sometimes both are wanting: of the barren florets of 1—2 *glumellas*: of the neuter ones often rudimentary or wanting. *Stamens* hypogynous, 1—6, rarely indefinite, usually 3. *Anthers* 2-celled, attached by their back about the middle, versatile. *Ovary* superior, 1-celled, with 1 *ovule*, usually with 2 (rarely 1, or 0) minute hypogynous scales (called *lodicules*, abortive *stamens*?). *Styles* 2, rarely 1 (simple or bifid) or 3 (perhaps only 1, and 2—3 cleft). *Stigmas* often plumose. *Pericarp* (a *caryopsis*) closely incorporated with the seed. *Embryo* lenticular, external, lying on one side at the base of the farinaceous *albumen*.—Stems or culms usually fistulose, generally simple and herbaceous, jointed, sometimes branched, rarely shrubby. Leaves one to each joint, with a sheath slit longitudinally on one side, having often a membranous appendage (*ligule*) at its summit. Flowers small, solitary, or in spikelets, which are paniced or spiked."—Br. Fl.

A. Stamens 2.

I. ANTHOXANTHUM, Linn. Vernal-grass.

"*Panicle* spiked. *Spikelets* with 1 perfect central floret, and 2 outer larger neuter ones. *Glumes* 2, very unequal; upper the longer. *Glumellas* of the perfect floret 2, awnless; of the neuter florets single, awned."—Br. Fl.

1. *A. odoratum*, L. Sweet-scented Vernal-grass. "Panicle spiked oblong often interrupted at the base, awn of the upper neuter *glumella* longer than the upper *glume*."—Br. Fl. p. 514.

E. B. t. 647. *Curt. Fl. Lond.* fasc. i. t. 4. *Host. Gram. Aust.* i. p. 5, t. 5.

Abundant everywhere in meadows and pastures. *Fl.* May, June. *Fr.* June. 24.

Root forming a dense tuft of pale brown, capillary, branched and downy fibres, emitting an odour which has been compared to that of the Tonquin Bean. *Culms* numerous, often forming thick clumps, from a span or under to a foot or two in length, geniculate below, then erect, straight, slender, terete, pale green, polished and glabrous, naked for a considerable way from the summit downwards. *Leaves* chiefly at the base of the culm and soon withering, those higher up few, distant, on long, close, furrowed and glabrous sheaths, rather short, flat, narrow-lanceolate, very acute, pale green or a little glaucous, beset on both sides with white spreading hairs, which at the rounded, clasping and often purple bases are long and fringing; sometimes glabrous. *Ligule* of medium length, clasping, sometimes tinged purplish below, very abrupt and truncate, more or less jagged and subciliate. *Panicle* erect, close, spicate, oblongo-lanceolate, pointed and subcompressed, from about $1\frac{1}{2}$ inch to 2 inches or more in length. *Spikelets* erect, or in flower erecto-patent, on simple or branched pedicels forming imperfect half-whorls, on the smooth, compressed, straight rachis, narrow-lanceolate, very acute, 3 or 4 lines in length, shining, with mixed shades of green, white and purplish. *Glumes* persistent, chaff-like and straw-yellow when ripe, very unequal, compressed, slightly scabrous, the outer and lower one about half the length of the other, ovato-lanceolate, with very deep, membranaceous, somewhat tawny margins and a single dorsal rib, bordered with green or purple, fringed with a few long erect hairs, and terminating in a short awn; *inner* and upper glume about twice as long as its fellow, 3-ribbed, the ribs scabrous and ending in a similar short awn to that of the outer glume, but the margins are strongly convolute, forming a complete fold or overlap, the edge of which is seen down one side of the valve, thus completely enwrapping the included floret as in a cloak or mantle, and concealing it from view at all stages of growth. *Florets* minute, deciduous when the seed is ripe, very far shorter than the glumes, the two lateral reduced to a single awned valve, the central of two awnless valves and perfect. *Paleæ* of the two lateral abortive florets single, abrupt and erose at apex, oblong, shining and diaphanous, scarcely ribbed, either colourless, tawny or greenish, becoming very dark tawny in seed, shaggy with long, erect, white or fulvous hairs, awned, one with the awn springing from near the base of the valve and upwards of twice its length, the awn of the other inserted not much below the apex of the valve and scarcely its own length. *Awns* scabrous, the longer one geniculate, brown and spirally twisted below the middle of its length, from thence to the end slender, pale and straight, the awn of the other floret pale, slender and straight throughout. *Paleæ* of the central and perfect floret much shorter than those of the lateral ones, oblong, equal in length, delicately membranaceous and diaphanous, obtuse, highly shining and glabrous, the lower and outer one much the larger and deeper, greenish. *Stamens* 2, much protruded from the apex of the inner glume; *anthers* pale yellow or purplish, of two long, narrow, apiculate lobes, on very slender white filaments; *pollen* large, white, globose. *Styles* long, slender, simple, feathery. *Nectary* of two oblong, thin, membranaceous, unequal scales, like the paleæ in shape, clasping the ovary below, and persistent. *Seed* small, ovoid, pointed, glabrous, yellowish and pellucid, closely sheathed in the membrane-like, brown and shining paleæ of the central or perfect floret, and included between the valves of the two exterior and imperfect ones, which fall away from the calyx in maturity, and then acquire a deep tawny colour.

B. Stamens 3. Styles 1.

II. NARDUS, Linn. Mat-grass.

"Spike simple, unilateral. Spikelets 1-flowered. Glumes 0. Glumellas 2; the outer one keeled with a long subulate point. Stigma elongated, filiform, papillose."—*Br. Fl.*

1. *N. stricta*, L. *Mat-grass*. *E. B.* t. 290. *Br. Fl.* p. 515. *Host. Gram. Aust.* ii. 4, t. 4.

On hilly, heathy and moory ground. *Fl.* June. 24.

E. Med.—In moist pastures close to the Wilderness, 1844. Pastures near Rookley farm, 1842. Pointed out to me at the foot of Bleak down by *W. Wilson Saunders, Esq.*

W. Med.—Plentifully on the northern side of Headon hill, overlooking Totland bay, 1841.

Root of many short, thick, downy fibres. *Stems* numerous, forming with the leaves dense, rigid, bristly tufts, from 3 or 4 to 6 or 10 inches in height, erect, round, striated with green lines, (rough with appressed bristles, *Leighton*), in my specimens smooth, jointed and grooved alternately above to receive the florets, their bases invested by the long, close, smooth and shining leaf-sheaths. *Leaves* setaceous by the involution of their edges, erect or partly spreading, very straight, stiff and pointed, dark green, furrowed and rough with rows of minute erect spines, ending beneath in long pale or pinkish sheaths, that are mostly enlarged and sometimes a little bulb-shaped at the base, each exterior sheath including two or more leaves, of which the innermost is erect, the outer diverging at nearly right angles from their sheaths. *Ligule* oblong, pointed, deeply bifid on the stem-leaves; that of the radical barren leaves short, truncate and entire. *Spike* very slender, straight or slightly recurved, of several linear, erect, distichous, alternate and unilateral florets, closely applied to grooves or cavities in the rachis for their reception. *Paleæ* unequal, outer one linear-lanceolate, greenish purple, ribbed, covered with rough points, tapering into a long awned extremity, bordered, like the margin of the valve itself, with a row of erect spines; *inner paleæ* very thin and membranous, closely embraced by the overlapping edges of the outer, ribless, truncate and spinulose at the summit. *Anthers* pale yellow. *Style* very long, simple and slender, much protruded.

C. Stamens 3. Styles 2.

* *Inflorescence* paniced.

† *Glumes* single-flowered.

a. *Panicle* close, compact, spike-like.

III. ALOPECURUS, Linn. Foxtail-grass.

"Panicle spiked. Spikelets compressed laterally. Glumes 2, nearly equal, usually connate at the base, membranaceous, about as long as the floret. Glumella solitary, with a dorsal awn above the base. Neuter florets 0."—*Br. Fl.*

1. *A. pratensis*, L. *Meadow Foxtail-grass*. "Culm erect smooth, panicle spiked cylindrical obtuse, glumes lanceolate acute hairy connate at the base, awn twice the length of the glumella."—*Br. Fl.* p. 516. *E. B.* t. 759.

Common everywhere in meadows, pastures, and by roadsides. *Fl.* May, June. 24.

2. *A. geniculatus*, L. *Floating Foxtail-grass*. Culms ascending bent at the joints, panicle spiked cylindrical obtuse, glumes united strongly ciliated on the back, their summits obtuse, awn twice as long as the glumes, corolla notched. *Sm. E. Fl.* i. p. 83. *Br. Fl.* p. 517. *Lind. Syn.* p. 300. *E. B.* xviii. t. 1250.

β. Culms swollen, clavate or bulb-shaped at their base.

γ. Awns longer than the florets, root bulbous, sheaths wider than the thickness of the culm, anthers purple, changing to brownish yellow.

In moist meadows and pastures, also in shallow pools and ditches, or even on dry ground; very commonly. *Fl.* May—August. 24.

β. With α. occasionally. On the Dover, Ryde, and elsewhere.

γ. In a bog at the source of the Yar, Freshwater gate (Easton marsh), *Withering*.

The culms of this species are sometimes found club-shaped or somewhat bulbous at their base, which has occasioned its being mistaken for *A. bulbosus*. I have occasionally met with the variety in this island, and was at first deceived by it myself. The appearance is purely accidental, and does not appear to depend, as has long been thought, on dryness of soil, for I have remarked it in specimens gathered in a very wet meadow, amongst others with roots not at all enlarged, whilst of numerous starved plants taken from the driest sand not one presented the clavate appearance which has caused so much misunderstanding amongst authors respecting the genuine *A. bulbosus*.

This plant is given as a native of N. America.

3. *A. bulbosus*, L. *Tuberous Foxtail-grass*. Culms erect? ascending or spreading, panicle spiked cylindrical acuminate, glumes very acute with 5 strong ribs shortly ciliated on the back free, base of the stem enlarged into bulb-like tubers. *Sm. E. Fl.* i. p. 82. *Br. Fl.* p. 517. *Lind. Syn.* p. 299. *E. B.* xviii. t. 1249. *Knapp, Br. Gr.* t. 17. *Parn. Gr.* t. 76.

In salt-marsh meadows, also in dry pasture and waste ground near the sea; in several places. *Fl.* May, June. 24.

E. Med.—On the Dover, Ryde, in great plenty. Meadows between the Dover and the Gasometer. Salt-marshes between Bembridge and Brading, near the sluice, &c., abundantly. Marshy spot by the roadside betwixt Brading and Sandown, 1848, *W. Borrer, Esq.* On the lawn of Lord Spencer's house at Ryde, *Dr. Bell-Salter*.

W. Med.—Between Yarmouth and Thorley, by the roadside near the bridge.

Our Isle-of-Wight plant is unquestionably that of Sir James Smith and of Knapp, *Br. Grasses*, t. 17, which last represents the slender tapering spike and general habit much better than the figure in *Engl. Botany*, where the spike is drawn much more ovate or less attenuated. Both these authors have fallen into error in their several descriptions; the first in asserting that *A. bulbosus* "always grows in water," since I find it in very dry ground, and am inclined to believe the bulbs are a provision of Nature for storing up in their fleshy and succulent substance a sufficiency of that moisture for the growth of the plant denied it by the soil. Knapp is mistaken in asserting that *A. bulbosus* is never decidedly "knee-bent," though he admits it has a tendency to become so. It is in fact often as procumbent and as much bent at the lower joint as *A. geniculatus*, but does not, like that, emit rooting fibres from the prostrate culm, and is when largest its inferior in size, though in a dry soil and starved condition *A. geniculatus* may be found as diminutive as the true *A. bulbosus*, and so closely resembling the latter as not to be distinguishable from it except after a close examination. I find both species flourishing in close proximity on the Dover and marsh-meadows contiguous, under precisely similar conditions of dryness or moisture; yet, in cases where the resemblance between individuals of each kind is so strong that I can hardly

pronounce upon them with confidence on a cursory inspection, an examination of the root and florets has always enabled me to decide without hesitation.

Regarding the root, any specific distinction drawn from that part alone might be open to objection on the ground that the same organ in *A. geniculatus* is sometimes seen to assume a bulbous character, and that a difference in degree alone can never be safely adduced to establish a permanent distinction. We must, then, have recourse to other marks, and such we find in the structure of the flowers, which in *A. bulbosus* are narrower than in *A. geniculatus*, with acute calyx-glumes, the membranous edges of which are emarginate below the submucronate apex, not rounded at their summit as in *A. geniculatus*, where the glumes are ciliated with long white hairs upon the back, that are far less conspicuous and much shorter in *A. bulbosus*. In both the calyx is clothed with silky hairs, but in *A. bulbosus* the five ribs are very strongly marked, especially on the outer side of the floret; these are of a deep purple or black and dilated upwards, the two intermediate lateral ones green, the dorsal almost mucronate at the point. The bulb-shaped or tuberosous bases of the culms in the present species assume that form as completely as *Poa bulbosa*, which never happens with *A. geniculatus*, the enlarged point of which is rather club-shaped, and destitute of the fine rose-colour so often seen on the former, and well represented by Mr. Curtis.

Notwithstanding the differences just mentioned, I think it very possible these two grasses may not be specifically distinct, accounting for the characters that mark *A. bulbosus*, on the hypothesis that the peculiarities of structure which, so united, lead to a conclusion directly the reverse, may, from causes unknown to us, be necessarily inseparable or coexistent; in other words, the same aberrant principle producing an alteration in one part in the vegetable structure may, for aught we know, as invariably induce a change on parts of the same plant the most remote.

4. *A. agrestis*, L. *Slender Foxtail-grass*. Vect. *Black-grass*. Culm erect scabrous above, panicle spiked slender cylindrical acuminate, glumes narrow-lanceolate very acute nearly glabrous united half-way up. *Sm. E. Fl.* i. p. 81. *Br. Fl.* p. 516. *Lind. Syn.* p. 299. *E. B.* xii. t. 848. *Knapp, Br. Gr.* t. 16. *Host. Gram. Aust.* iii. 9, t. 12. *Parn. Gr.* t. 3.

Much too plentiful in cultivated fields, amongst corn, clover and other crops. *Fl.* April—October. ☉.

E. Med.—Extremely common about Ryde, Bembridge, Shanklin, Luccombe, Bonchurch, Sandown, &c.

W. Med.—Cornfields about Thorley, Wellow, Calbourne.

An entirely glabrous grass. *Root* small, fibrous (slightly creeping, *M. et K.*), annual, emitting numerous slender culms, from about 12—24 inches high, erect or geniculate in the lowermost of the hard, shining, cartilaginous joints, where they are sometimes slightly branched; smooth or immediately below the spike only somewhat roughish, leafless for a considerable distance from the latter downwards. *Leaves* distant, short, pale grayish green, finely striated, a little scabrous above and on the margins, with a brownish fold or auricle at base, on long, ribbed, somewhat inflated *sheaths*, that are open their whole length, and very shining on their inner surface. *Ligule* short, truncate and torn. *Panicle* closely spicate, simple or very slightly branched, slender and subcylindrical, a little tapered at each end, acute, from about 2½ to 3½ inches long and about 2 lines wide, either pale green or more usually wholly or in part of a dark purplish red. *Spikelets* larger than in *A. pratensis*, closely imbricated, placed in an irregular alternation on the smooth rachis, mostly solitary, but a few of the very unequal pedicels are occasionally forked and bearing a second spikelet. *Glumes* joined obliquely to their pedicels at their annular cartilaginous base, a mode of insertion not represented in our published figures of the species, awnless, much compressed, equal, membranous, pointed, concave on the side next the rachis, perfectly united below for above a third of their length upwards, spinulosely scabrous on the very sharp

keel, near which on either side is a strong green rib reaching almost to the apex, and an additional pair near the margins of the glumes, not attaining the length of the former, of which lateral pair the exterior rib is generally rough and prominent. *Palea* ovato-oblong, the length of the glumes, folded, glabrous, with two strong scabrous ribs on each side, one near the dorsal, the other near the anterior margin, green above, pale and evanescent as they descend. *Awn* slender, twisted, smooth below, scabrous above, pretty straight, inserted very near to the base of the palea and about twice its length. *Anthems* much protruded, pale buff or purple; *filaments* flat, tapering. *Ovary* minute, ovate, smooth and shining. *Scale* (nectary, *Sm.*) obsolete? *Styles* united at their base, very long, tapering, simple and feathery.

The cornfields are in many parts of the island quite covered with the slender purple spikes of this most troublesome and prolific weed, which continues longer in flower than almost any other grass, and, from exclusively affecting cultivated land, besides having an annual root, is, unlike the perennial species of the genus, entirely useless as pasturage. This is the Black-grass of the Isle-of-Wight farmers, and is no doubt so called from its injurious qualities, and not from its colour. Happily the species is confined to the more southern parts of Britain, being rare and perhaps not indigenous to Scotland and (as yet unknown in) Ireland.

IV. PHLEUM, Linn. Cat's-tail-grass.

"*Panicle* spiked. *Spikelets* laterally compressed. *Glumes* nearly equal, parallel, acuminate or mucronato-aristate, longer than the floret. *Glumellas* 2, membranous, glabrous, awnless. *Caryopsis* free."—*Br. Fl.*

1. *P. pratensis*, L. *Meadow Cat's-tail-grass*. *Timothy-grass*. "*Panicle* cylindrical, glumes truncated mucronato-aristate ciliated at the back at least twice as long as the awn, neuter floret wanting."—*Br. Fl.* p. 519. *E. B.* t. 1076. *Host. Gram. Aust.* iii. 7, t. 9.

In meadows and pastures; everywhere. *Fl.* June—October. 24.

2. *P. arenarium*, L. *Sea-side Cat's-tail-grass*. *Sand Cat's-tail-grass*. "*Panicle* obovato-cylindrical, glumes lanceolate acute ciliated at the back above the middle."—*Br. Fl.* p. 520. *Parn. Gr.* t. 7. *Phalaris*, *E. B.* t. 222.

In sandy fields and on the sandy shores of the sea; very rare. *Fl.* May, June. ☉.

W. Med.—Found in considerable abundance on the sandy shore at Norton, Freshwater, June 21st, 1846.

V. AMMOPHILA, Host. Sea-reed.

"*Panicle* spiked. *Spikelets* laterally compressed. *Glumes* nearly equal, keeled, membranaceous, diverging, longer than the floret. *Glumellas* 2, subcoriaceous below, each with a tuft of short silky hairs at the base; outer one mucronulate or with a very short awn below the point. *Neuter floret* 1, rudimentary and very minute, coriaceous, sessile, often obsolete."—*Br. Fl.*

1. *A. arenaria*, [Link.] *Common Sea-reed*, *Marram* or *Mat-weed*. "*Panicle* cylindrical acuminate, glumes acute, hairs one-third the length of the floret."—*Br. Fl.* *A. arundinacea*, *Host.*

Gram. Aust. iv. 24, t. 41. *Br. Fl.* p. 518. *Arundo arenaria*, *E. B.* t. 520.

On the loose sand of the sea-shore. *Fl.* July. *Fr.* September. 24.

E. Med.—At the E. end of the Dover, Ryde, very sparingly. In driving sand on St. Helens spit, in great abundance. On the beach at Sandown, in small quantity.

W. Med.—Norton spit, by Yarmouth, in some plenty.

Root or rather *rhizoma* creeping deeply and widely in the loose sand, of the thickness of a quill, smooth, cylindrical and fistulose, straw-yellow, jointed, emitting from the joints white, woolly, somewhat compressed, flexuose, scarcely branching fibres. *Culms* erect or ascending at base, the lower part often buried horizontally beneath the sand, about 2 or 3 feet high, straw-yellow, slender, round, hard and polished, filled with cellular tissue or somewhat perforate, naked for a considerable distance at top, the remainder invested by the long, convolute, striated *sheaths* of the 3 or 4 (?) cauline leaves; usually bent or geniculate about the middle at the shining tumid articulation. *Leaves* long, linear, erect, very rigid, but not difficult to break or tear, very like those of *Triticum junceum*, but still more rigid, with far more prominent ribs above, concave or a little involute, very smooth and polished on their convex side, tapering to a fine point. *Ligule* very long, often an inch or more, acuminate, torn or split irregularly, mostly bi- or tripartite. *Panicle* compound, very close, spicate, cylindrical, tapering at each end, 5 or 6 inches long, pale straw-yellow like the culm. *Glumes* lanceolate, nearly equal, compressed and chaffy, the inner one with three, the outer with a single green rib. *Floret* surrounded with a tuft of short silky hairs at its base, about $\frac{1}{3}$ rd of its own length, on one side of which is a minute scale, attached to the calyx, probably an abortive second floret. *Palea* nearly equal, with a few (3 or 4) green ribs, notched a little at the acute summit of each; keel bristly, and in the outer valve terminating in a very short rough point, hardly to be called an awn, and scarcely reaching the apex. *Anthers* at first purple, afterwards buff-coloured. *Styles* distant; *stigmas* long, loosely feathery. *Seed* free, loosely enclosed in the palea, pale brown, oblong or obconical, terete, with a groove on each side, partially perfected only in each panicle.

I cannot learn that there exists any peculiar name for this plant in the island, where it is known only as *Spire*, a term applied by the islanders to all the larger-spiked and close-panicked grasses, *Carices* and *Typhæ*.

VI. GASTRIDIMUM, *P. de Beauv.* Nit-grass.

"*Panicle* contracted, spiked. *Spikelets* scarcely compressed. *Glumes* 2, acute, awnless, ventricose and rounded at the base, keeled upwards, membranaceous, much longer than the floret. *Glumellas* 2, membranaceous; outer one truncate or toothed at the end, with (or without) a long straight awn below the point. *Neuter florets* 0."—*Br. Fl.*

1. *G. lendigerum*, Beauv. *Awned Nit-grass.* Panicle dense spicate, glumes very acute, florets (mostly) awned. *Br. Fl.* p. 521. *Millium lendigerum*, *Sm. E. Fl.* i. p. 88. *Lind. Syn.* p. 303. *E. B.* xvi. t. 1107. *Curt. Br. Entom.* xiv. t. et fol. 650. *Gaud. Fl. Helv.* i. p. 177. *Sibth. Fl. Græca*, i. t. 65. *Host. Gram. Aust.* iii. 17, t. 24.

By waysides, in waste places, dry rough pastures, and amongst corn, also in woods occasionally; of very frequent occurrence. *Fl.* June—October. ☉.

E. Med.—Very frequent about Ryde in certain years, as between Quarr and the Fish-houses, in the fields and along the roadside. On the Dover and at Sea View. Amongst corn by a farm at Westridge, and in wheat-fields about West-

brook farm. Cornfields at St. Helens. Very abundantly on the waste building-lots at E. Cowes park, 1846. Fields and woods along the new road from Wootton bridge to King's quay, in abundance, 1848. Plentiful in a field at Beaper farm, also in a wheat-stubble near Hardingshoot farm, 1848. Plentiful in a lay-field on the North side of Coppid hall. In Whitefield wood, 1848.

W. Med.—Frequent in cornfields about Cowes. In 1841 I found a large field near Gurnet farm nearly covered with it. A perfect weed in cornfields about Freshwater, Thorley and Freshwater parish in some seasons. At Garrets, near Newport.

A most beautiful and elegant grass, whose pale green, tapering, spear-shaped panicle shines with a satiny or silvery lustre, becoming grayish or yellowish as the seed ripens. *Root* whitish, fibrous, and I have no doubt annual, though Hooker marks it perennial. *Culms* numerous, 6—18 inches high, erect or spreading, ascending at the base, round, smooth, shining and leafy. *Leaves* pale green, linear, rough-edged, taper-pointed, with striated slightly tumid sheaths. *Ligule* oblong, much torn and notched at the summit. *Panicle* 2 or 3 inches in length, narrow and tapering, at first very compact or spicate, afterwards a little diffuse, of many close-set, half-whorled, roughish and compound branches. *Glumes* unequal, very acute, single-ribbed, rough on the back, with white membranous edges, suddenly dilating at the base into a membranous sac or cavity very like the spatha of an Arum, and enclosing the solitary *floret*. *Palea* much shorter than the glumes, very broad and concave, nearly equal. *Outer valve* truncate, its broad summit with several tooth-like notches, with or without an awn at some distance below the top, and which usually exceeds the glumes; *inner valve* smaller, with a narrower bifid summit and awnless; both are somewhat hairy at the base, but I do not find them downy as Smith describes them. *Stamens* short, with violet anthers. *Styles* distant; *stigmas* short, somewhat erect, unbranched. *Seed* enclosed in the hardened tumid base of the glumes.

Smith says the awn is rarely wanting, but in my specimens it is as often absent as present. The figure of this species in 'Flora Græca' is scarcely given with the usual attention to minuteness and accuracy so characteristic of that rare, elegant and costly work, the glumes being there represented as simply acicular.

This fine grass, though generally diffused over the island, is not equally abundant every season in the same locality, being, like most annual plants, somewhat capricious in its stations.

β. *Panicle loose or spreading.*

VII. MILIUM, Linn. Millet-grass.

"*Panicle* spreading. *Spikelets* somewhat dorsally compressed, awnless. *Glumes* 2, nearly equal, flattish, herbaceous, rather acute, scarcely longer than the *floret*. *Glumellas* 2, nearly equal, glabrous, at length hardened and enclosing the *caryopsis*. *Neuter florets* 0."—*Br. Fl.*

1. *M. effusum*, L. *Spreading Millet-grass. Wood Millet-grass.* *Panicle* diffuse, *florets* ovate without awns. *Sm. E. Fl.* i. p. 87. *Br. Fl.* p. 520. *E. B.* xvi. t. 1106. *Curt. Fl. Lond.* fasc. 4, t. 12. *Curt. Br. Entom.* xv. t. et fol. 710. *Host. Gram. Aust.* iii. 16, t. 22.

In moist shady woods; not very common. *Fl.* May, June. 24.

E. Med.—Frequent in some parts of Quarr copse. Between Ninham farm and the Newport road, nearly opposite Quarr abbey. Shore copse, sparingly. In Cowpit-cliff copse, Greatwood copse, and other hill-side copses between Shanklin and Bonchurch, plentifully. Wood near Norris castle. Wood at Apse castle. In Knighton East wood, 1845; also in Inwards copse, sparingly, 1845.

In Bloodstone copse, sparingly, 1846. In New copse, near Wootton bridge, 1846. Sparingly in copses under Arretton and Mersley or Messley downs, 1844.

W. Med.—Tolt wood, near Gatcombe. Copse on the N. side of Wroxall down, above Wroxall farm.

A large, nearly smooth, slender grass, of a pale, delicate, rather glaucous green; about 3 feet high, growing in clumps. *Leaves* distant, broad, flat, thin and pointed, short for their width, finely serrated, on long close-ribbed *sheaths*. *Ligule* oblong, jagged. *Panicle* lax, of several distant, spreading, half-whorled tufts of smooth, slender, compound, wavy branches, a little rough only on their ultimate divisions. *Florets* ovate, pointed, scarcely $\frac{1}{3}$ th of an inch long. *Glumes* equal, thin, 3-ribbed, roughish externally with small points. *Palea* nearly as long as the calyx, equal, concave, thin and shining; *outer* one indistinctly 3-ribbed, the *inner* plainly 2-ribbed. *Anthems* pale yellow. *Stigmas* short, feathery, spreading horizontally.

VIII. AGROSTIS, Linn. Bent-grass.

Panicle loose. *Spikelets* laterally compressed. *Glumes* 2, acute, membranaceous, longer than the floret, awnless. *Floret* sessile, glabrous or with 1—2 tufts of very short hairs at the base. *Glumellas* 2, unequal; the inner sometimes wanting, the outer with or without an awn. *Caryopsis* free, oblong or linear.

A very intricate and perplexing genus of grasses to the botanist, from the variety of form and aspect the same species will assume according to soil and situation, and the suppression or assumption of certain organs that in more constant genera furnish the readiest specific distinctions. Though simple enough in structure, the minuteness and elasticity of the parts render the dissection of the florets a very troublesome task, trying alike to the patience and eyes of the operator. The nerves of the valves of the corolla, to which an undue importance is attached, are often hardly to be traced under a high magnifier, the valve showing like an uniform and ribless membrane. For this reason I have omitted all mention of them in the specific descriptions, conceiving the descriptions will be found sufficiently clear without referring to marks so undecisive. For the same reasons the unnatural genus *Trichodium* of Schrader, founded solely on the suppression or partial development of one valve or palea of the corolla, is here discarded.

1. *A. canina*, L. *Brown Bent-grass*. "Branches of the panicle long slender erect-patent, glumes unequal lanceolate rough at the keel, outer one 1-nerved, glumella 1 erose at the end 5-nerved with a dorsal awn from below the middle, leaves linear, sheaths smooth, ligule oblong acute."—*Br. Fl.* p. 523. *E. B.* t. 1856. *Host. Gram. Aust.* iv. 31, t. 53.

Moist woods, meadows, heaths and pastures. *Fl.* July. 24.

E. Med.—Inwards copse, near Ashey, in great plenty. [In the lane leading from the Ryde and Newport road to Fishbourne, *Dr. Bell-Salter*, Edrs.]

W. Med.—[Cockleton bog, *Dr. Bell-Salter*, Edrs.]

2. *A. vulgaris*, With. *Fine Bent-grass*. "Branches of the panicle smoothish its branchlets spreading after flowering, glumes nearly equal, outer one rough on the keel above, outer glumella 3-nerved, ligule extremely short and truncate."—*Br. Fl.* p. 524. *E. B.* t. 1671. *Host. Gram. Aust.* iv. 34, t. 59.

In rough stony or sandy pastures, on heaths, by roadsides and other dry places; abundant. *Fl.* July, August. 24.

Best distinguished from our other common species by the extremely short and blunt ligule, the thin, light, airy panicle, the capillary branches of whose whorls are few, and spread equally in every direction. The distant scattered flowers and generally upright stem will prevent its being confounded with *A. alba*.

3. *A. alba*, L. *Marsh Bent-grass*. "Branches of the panicle hispid its branchlets erect after flowering, glumes nearly equal, outer one rough on the keel all over, outer glumella 5-nerved, ligule elongated acute."—*Br. Fl.* p. 524. *E. B.* t. 1189.

In moist shady woods, meadows, ditches and wet cornfields; very common. *Fl.* July, August. 24.

Known at first sight from *A. vulgaris* by its larger and stouter habit; much more numerous flowers, which are crowded on the panicle; and on a closer inspection by the thickly-set branches of the whorls, which stand alternately in bundles on opposite sides of the main stem; and, lastly, by the oblong and generally torn ligule.

4. *A. setacea*, Curt. *Bristle-leaved Bent-grass*. Vect. *Rabbit-grass*. *Deer's-foot-grass*. Panicle oblong with short close branches spreading only when in flower, outer palea with a long bent awn from near the base, inner one very small with a tuft of minute hairs at the bottom, leaves setaceous. *Sm. E. Fl.* i. p. 91. *Br. Fl.* p. 523. *Lind. Syn.* p. 303. (Trichod. set.) *E. B.* xvii. t. 1188. *Curt. Fl. Lond.* fasc. 6, t. 12. *Parn. Gr.* t. 83.

On dry turfy heaths, commons and high downs; frequent. *Fl.* June, July. 24.

E. Med.—All over Munsley hill, by Godshill, 1844. Abundant on Stapler's heath and St. George's down. On the beautiful wooded hill called Apse castle, near Shanklin, plentifully. Abundant on the yet unenclosed spots on Royal heath. Youngwood's copse, and all over Bordwood, &c., abundantly, as also in most dry, elevated and heathy spots throughout the island. Apse heath and Bleak down, *D. Turner, Esq.*

W. Med.—Heathy places about Kingston. About Colwell, Hill farm and Freshwater, not unfrequent, *Fl. Vect.* [Furzy hill above Brixton, plentiful, *A. G. More, Esq., Edrs.*]

Root tufted, with long, pale, downy and somewhat woody fibres. Culms 12—18 inches high, erect or ascending, slender, smooth and striated. Radical leaves numerous, not half the length of the culms, of a grayish or glaucous green, involute, capillaceo-setaceous, stiffish, those of the culm few, distant, a little broader, with long smooth sheaths. Ligule rather short, torn. Panicle erect, close, spreading a little only in fine weather,* taper-pointed, its branches in distant half-whorled bundles, dividing in a somewhat ternate manner, rough and angular. Glumes unequal, lanceolate, acute, purple and green, hollow, roughish at the back; outer one the larger and longer, with a single green dorsal rib; inner with a similar rib and two short lateral ones from the base. Palea much shorter than the glumes, white, thin and membranous; outer one greatly larger than the inner, with inflexed edges and 4-ribbed, the two middle ribs produced into short awns at the truncate summit; from the back of the valve just above the base proceeds a long roughish awn, bent about the middle and much exerted beyond the glumes; inner palea very minute, oblong or ovate, flat, toothed or notched at its obtuse summit, and having a minute tuft of hairs at the base. Anthers yellowish or purple, their lobes widely spreading after the pollen is discharged. Germen ovate; styles short.

* The panicle, like that of *Calamagrostis Epigejos*, remains closed as well after as before the flowering season, and indeed is but little expanded at any time, excepting in favourable states of the weather and at certain times of the day, collapsing even then on being gathered.

This rare or rather local British grass was first distinguished as a species by Curtis, and, though not conspicuous or striking in its habit, is readily known from its congeners by the narrow, close, spiked panicle, the very fine bristle-like leaves, and the gray silvery hue of the herbage, delighting to spring under the shelter of the heath and furze. In more open places it forms a fine elastic but slippery turf; yet, abundant as it is on our heaths and downs, I do not believe it yields a palatable food to sheep, if they touch it at all, as in many parts where this grass almost covers the soil, and sheep abound, its silvery panicle waves uncropped by those animals.

Agrostis setacea is quite confined to the counties south of London, unless the alleged Yorkshire and Scottish stations, which want confirmation, should prove to be correct. It is the prevailing grass on Southampton common, as also in many parts of Devonshire and Cornwall: it is also plentiful in the West of France and in Portugal, but in the Isle of Wight has almost reached its eastern limit, having hitherto been detected in only one spot in Sussex, and abundantly in Surrey on Bagshot heath, which is its most northerly well-ascertained limit.

IX. CALAMAGROSTIS, Adans. Small-reed.

"Panicle loose or close. Spikelets laterally compressed. Glumes 2, nearly equal, longer than the floret, which is surrounded by hairy scales at the base. Glumellas 2, membranaceous; outer one (sometimes shortly) awned at the point or back, very rarely awnless. Neuter floret wanting, or reduced to a short scale or pedicel."—*Br. Fl.*

1. *C. Epigejos*, Roth. *Wood Small-reed*. Glumes subulate their keels rough, panicle close before and after flowering, florets crowded unilaterally on the branches, outer palea with a dorsal awn nearly as long as the calyx. *Br. Fl.* p. 522. *Parn. Gr. t.* 16. *Arundo* Epig., *L.*: *Sm. E. Fl.* i. p. 169. *E. B.* vi. t. 403 (bona). *Curt. Br. Entom.* xiv. t. et fol. 666. *Host. Gram. Aust.* iv. 24, t. 42.

In moist open places on sand and clay in woods, thickets and amongst bushes; abundant in the northern part of the island, and especially in *E. Medina*; but not found on chalk, and hence rare in the southern half of the island. *Fl.* July, August. 24.

E. Med.—Everywhere about Ryde, where there is scarcely a patch of wood or bushes that does not produce this grass. Above Cowpit cliff, 1844. Almost everywhere along the shore, on wet clay, between *E. Cowes* and King's quay, as well as along the shores of that estuary. Willow-bed below Stapler's farm, and elsewhere near Newport.

W. Med.—In and about Parkhurst forest. Thorness wood and shore adjacent. Near the Medina above Cowes. Frequent about Yarmouth, as by the roadside nearly opposite Afton house, near Wellow.

Root slender, creeping, with a few whitish fibres. Culms erect, 3 or 4 feet high, round, slender, hollow, rough only for an inch or two below the panicle. Leaves of the barren radical shoots much shorter than the culms, erect, linear, taper-pointed, very rough on the keel and margins, pale green and a little glaucous, flat, but soon becoming involute when gathered; those of the culm few, distant, with very long close sheaths, pale green, linear and tapering, roughish beneath and on the edges, often involute. Ligule about $\frac{1}{4}$ an inch long, lanceolate and usually much torn. Panicle often a foot in length, slender, lobed, tapering to a point, a little inclining; pale, purplish, reddish or a mixture of all together; of many half-whorled, slender, rough and compound branches. Florets crowded unilaterally on the branches of the panicle, which spread a little only whilst in

blossom, afterwards, as previous to flowering, becoming coarctate. *Glumes* about equal, very narrow and taper-pointed, rough at the back, with a green rib down the centre of each. *Corolla* much shorter than the calyx and more unequal, its valves thin, white and membranous. *Outer palea* bifid at the point, with a rough dorsal *awn* inserted nearly in the middle, and about as long as the tuft of hairs that surround the base of the corolla, from which, being almost equally slender and pale-coloured, it is not easy at first to distinguish it; *inner palea* much smaller. *Anthers* yellowish. *Stigmas* simply branched.

X. PHALARIS, Linn. Canary-grass.

"*Panicle* spiked or spreading. *Spikelets* laterally compressed. *Glumes* 2, nearly equal, erect, navicular, membranaceous, longer than the floret. *Glumellas* 2, awnless, glabrous or equally hairy, at length hardened and investing the *caryopsis*. *Neuter florets* 1—2, rudimentary, sessile and scale-like."—*Br. Fl.*

1. *P. arundinacea*, L. *Reed Canary-grass*. *Riband-grass*. *Gardener's Garters*. "*Panicle* erect its branches patent, florets crested secund, neuter florets consisting of 1—2 small hairy valves."—*Br. Fl.* p. 518. *E. B.* t. 402. *Host. Gram. Aust.* ii. 25, t. 33. *Digraphis arundinacea*, Trin.

By the side of rivers, ponds, pools and ditches; not unfrequently. *Fl.* July, August. 24.

E. Med.—In various parts of Sandown level. Willow-thicket between Messley farm and Langbridge. By the stream-side at Yarbridge, and by the bridge at Alverston. [Near the sluice at Brading, *A. G. More, Esq.*, Edrs.]

W. Med.—By the Medina at Shide bridge. In the pond below Carisbrooke castle; also by the stream between Newbridge and Mill green. Abundant by the mill-streams and ponds by Newport and Carisbrooke, 1845.

†† *Glumes* 2- or rarely 3-flowered.

XI. CATABROSA, P. de Beauv. Whorl-grass.

"*Panicle* spreading. *Spikelets* scarcely compressed, ovate, awnless, with 1—3 perfect *florets* and often 1—2 neuter ones. *Glumes* 2, membranaceous, 1-nerved, much shorter than the spikelets, rounded on the back, very obtuse, lower one the smaller, upper crenate or toothed at the end. *Glumellas* 2, coriaceous, membranaceous only at the extremity, 3-ribbed, truncated and erose at the end, nearly equal. *Caryopsis* free."—*Br. Fl.*

1. *C. aquatica*, Beauv. *Water Whorl-grass*. *Panicle* spreading with whorled branches, leaves broadly linear obtuse flat, ligule oblong. *Br. Fl.* p. 525. *Parn. Gr.* t. 20. *Aira aquatica*, Sm. *E. Fl.* i. p. 102. *Lind. Syn.* p. 306. *E. B.* xxii. t. 1557. *Curt. Fl. Lond.* fasc. i. t. 5. *Host. Gram. Aust.* ii. 30, t. 41.

In shallow pools and ditches; rather rare. *Fl.* May—July.

Calamagrostis lanceolata, Roth (*Arundo Calamagrostis*, L.), grows on the coast opposite Ryde, at Gomer pond, and near Southampton.

Phalaris Canariensis, L., is occasionally found, a plant or two here and there, on waste ground, manure-heaps, &c., but it can hardly be said to be naturalized with us, and hence is not a proper species for insertion here.

E. Med.—In a ditch in Appuldurcombe park. In several marsh-meadow ditches in Sandown level, above Alverstton mill, one of which I found nearly filled with it. Under the cliff at Foreland, *Dr. Bell-Salter*. Pond near the village of Pan, *Mr. Snooke*.

Whole herb quite smooth, very brittle and tender. *Culms* procumbent or floating, 2—3 feet long, branched, rooting at the white swollen lower joints with bundles of whitish fibres, their flowering extremities erect. *Leaves* short, linear, bluntish, often bifid at the point, quite flat above, with a sharp narrow keel beneath, pale green, glabrous, with long, loose and smooth sheaths. *Ligule* short, broad, pointed, mostly torn. *Panicle* erect, of many distant sets of half-whorled, unequal, spreading, angular, compound branches, that are sometimes deflexed. *Florets* 2—4, greatly longer than the glumes, the upper one shortly pedicellate. *Glumes* green or purple, much shorter than the florets, very unequal, truncate, eroso-dentate; outer one much the smaller and shorter, nerveless; inner one 3-ribbed at the base only. *Palea* equal, bluntish, membranous, erose at their summits, outer one with 3, inner with 2, very strong prominent ribs; this last is hollow like the outer valve, and encloses the stamens, &c., contrary to the usual structure in grasses, in which the inner palea is flattened and empty, the outer only embracing the organs of reproduction. *Anthems* pale yellow. *Styles* but little branched or feathery, approximate.

XII. AIRA, Linn. Hair-grass.

"*Panicle* lax (rarely contracted). *Spikelets* laterally compressed, with 2 (or rarely 3 or 1) perfect florets and sometimes a neuter one which is usually rudimentary. *Glumes* 2, unequal, about as long as the *florets*, the outer 1-nerved. *Glumellas* membranaceous and thin, hairy at the base; the outer one awned at the back, with or without faint lateral nerves, toothed or entire or bifid but not setigerous at the end. *Caryopsis* glabrous." — *Br. Fl.*

* *Panicle* close or subspicate.

1. *A. præcox*, L. *Early Hair-grass*. "*Panicle* contracted oblong, spikelets somewhat acute at the base, florets scarcely vilous at the base about as long as the glumes, awn twisted inserted below the middle and usually near the base longer than the glumes, leaves setaceous." — *Br. Fl.* p. 529. *E. B.* t. 1296. *Host. Gram. Aust.* iv. 22, t. 37. *Parn. Gr.* t. 24.

On dry sandy or gravelly heaths, pastures, wall-tops and waste ground; not unfrequent. *Fl.* May, June. ☉.

E. Med.—Plentiful a few years back on the Dover, just behind the saw-pit, but I believe now destroyed by the deposition of broken brick and other rubbish. Near the top of the hill at Apse castle, abundant. On Royal heath. [On St. Helens spit, plentifully, *A. G. More, Esq.*, Edrs.]

A small grass, for the most part forming cæspitose often depressed tufts. *Root* annual, of several slender hair-like fibres. *Culms* several, erect, often spreading nearly flat or radiating, from an inch or 2 inches to a span long, slender, rigid, shining and glabrous, leafy nearly or quite to the summit, angular above and striated, tumid at the joints, and at the lower ones often geniculate, in dry seasons and situations often reddish. *Leaves* mostly if not wholly confined to the stem, very short, linear, suberect, from the involution of their margins appearing setaceous, obtuse, rough-edged, the inferior ones soon withering. *Sheaths* slightly tumid, ribbed and angular, smooth, the uppermost much longer than their leaves, the rest shorter or about equal to the latter. *Ligule* large, lanceolate or oblong,

sheathing, torn and bifid. *Panicle* linear-lanceolate, erect, scarcely exceeding an inch in length at most, of several upright, slightly compound, roughish, angular, waved branches, so closely coarctate as to appear spiked. *Spikelets* ovato-lanceolate, erect, glabrous, of a silvery gray aspect mixed with green, sometimes purplish. *Glumes* equal, ovato-lanceolate, a little compressed, awnless, green and towards the summit scabrous at the back, with very broad scarious margins, extremely acute and minutely jagged or serrate at the often cloven apex and for some distance below it along the edges, 3-ribbed, the two lateral ribs shorter than the middle one and conspicuous chiefly at the base, where the glumes are slightly if at all rounded or gibbous as in the next. *Florets* 2, about as long as the glumes, the inferior one sessile, the superior stipitate, on a very short pedicel, each with a few short hairs forming a tuft at the base. *Palea* glabrous, light green; inferior and outer one lanceolate, concave, acuminate, deeply bifid, with slender, pale, scabrous points, faintly (5-?) ribbed, furnished with a dorsal awn nearly twice its own length, brown in its lower, pale in its upper half, twisted and somewhat geniculate, smooth or roughish; superior and inner palea shorter than the outer, lanceolate, membranous, slightly cloven, with broadly inflexed margins and a green, roughish, lateral rib on each side at the angle of reduplication. *Stamens* short; *anthers* yellow. *Germen* turbinate, substipitate; *styles* short, distant, branched nearly from the base but not copiously.

This is one of the smallest and earliest of our grasses, and is closely allied to *A. caryophyllea*, from which, however, its smaller size and close spicate panicle at once distinguish it.

* *Panicle* lax, spreading or diffuse.

2. *A. caryophyllea*, L. *Silvery Hair-grass*. Panicle divaricated, florets slightly villous at their base both sessile shorter than the glumes, awn inserted below the middle of and much longer than the valve, leaves setaceous, ligule lanceolate cloven. *Sm. E. Fl.* i. p. 106. *Br. Fl.* p. 528. *Lind. Syn.* p. 308. *E. B.* xii. t. 812. *Curt. Fl. Lond.* fasc. 6, t. 6. *Host. Gram. Aust.* ii. 33, t. 44.

In dry, barren, gravelly and hilly pastures; not uncommon. *Fl.* June, July.

○ *E. Med.*—In rough elevated fields near Bembridge, plentifully. Field between Sandown and Lee farm, in great profusion. On Royal heath and Lake common. [St. Helens spit, plentifully, *Dr. Bell-Salter*, Edrs.]

Root small, of a few hairy fibres. *Culm* erect, from 3 to 12 inches high, smooth, slender. *Leaves* few, very narrow, from their involute edges appearing setaceous, erect, stiffish, many-ribbed; upper ones much shorter than their smooth, striated, but angular *sheaths*. *Ligule* tapering into a very long acute point. *Panicle* of numerous capillary, repeatedly trichotomous, erect or patent branches, that are smoothish and a little waved or flexuose, but much less so than in the following species. *Glumes* equal, lanceolate, very acute, ribless, with white, jagged, membranous tips, and variegated green and purple. *Florets* much shorter than the glumes, both sessile, and with a minute tuft of hairs at their base. *Palea* unequal, granulated; outer or lower one with a tapering, serrated, or bristly and cloven point, and having a long, rough, jointed awn on the back below the middle of the valve, purplish beneath, pale above the articulation; inner valve much shorter and flatter.

This grass is more likely to be mistaken for *A. flexuosa* than for the preceding, to both of which indeed it is very nearly allied, and as it were an intermediate though very distinct species.

3. *A. flexuosa*, L. *Wave Hair-grass*. Panicle (when flowering) diffuse, florets villous at the base about as long as the glumes, one of them on a short pedicel, awn jointed much longer than the

glumes inserted near the base of the palea, leaves setaceous. *Sm. E. Fl.* i. p. 104. *Br. Fl.* p. 527. *Lind. Syn.* p. 308. *E. B.* xxii. t. 1519. *Host, Gram. Aust.* ii. 32, t. 43. *Parn. Gr.* tt. 23, 107.

On dry hilly and heathy ground; but seldom. *Fl.* June, July. 24.

E. Med.—At Apse castle, near Shanklin, pretty abundantly. On St. George's down. On Royal heath, *Albert Hambrough, Esq.*

About 12 or 18 inches in height, growing in dense tufts. *Root* of many whitish, sometimes woolly, fibres. *Culms* erect, round, slender, quite smooth, leafless in their upper half. *Leaves* short, the lower ones in small bundles arising from a sheath at the base of the culm, setaceous; *stem-leaves* a little broader, with involute overlapping edges and very long close *sheaths*, all smooth except a slight roughness along the edges near their tips. *Ligule* short, obtuse, cloven. *Panicle* loose, of several erecto-patent, slender, smoothish and reddish branches, doubly and triply subdivided into capillary ramifications, which, with the main branches, are more or less waved or flexuose, whence the specific name. *Spikelets* of a mixed white and reddish colour, as if partially bleached. *Glumes* nearly equal, chaffy, finely pointed, with a single keel-like rib not reaching to the apex, tinged with purple at their base. *Florets* 2 (seldom 3, *Koch* and *Mert.*), seated in a tuft of short hairs, one of them on a minute pedicel. *Palea* like the glumes in shape and colour, and about equal to them in length; *outer* one 4-ribbed, with a roughish awn, nearly double its own length, inserted on the back of the valve just above the base. *Scale* deeply cloven, with acute diverging lobes, as long as the *germen*. *Styles* distant, feathery.

The much larger size, deeper colour, short blunt ligule, and perennial root, will always prevent this being confounded with the preceding species, which is, besides, a much earlier plant than the present.

4. *A. cæspitosa*, L. *Turfy Hair-grass*. "Panicle diffuse, branches scabrous, glumes slightly rough on the midrib, upper 3-ribbed, florets hairy at the base rather longer than the glumes, awn straight inserted near the base of and seldom exceeding in length the outer glumella."—*Br. Fl.* p. 526. *E. B.* t. 1453. *Host. Gram. Aust.* ii. 31, t. 42.

In moist shady places, woods and copses; plentiful. *Fl.* June—August. 24.

E. Med.—In Quarr copse, Apley woods, and elsewhere about Ryde.

W. Med.—Abundant in woods at Yarmouth.

The leaves are remarkably rough on their upper side, with numerous deep furrows, the intermediate ridges being armed with innumerable minute saw-like prickles, offering great resistance to the fingers when drawn along the leaf in a contrary direction to their points. Might not this roughness be employed in polishing turnery and metal wares, instead of the imported Dutch Rushes (*Equisetum hyemale*)?

XIII. KÖHLERIA, Pers. Köhleria.

"Panicle spiked, rounded. *Spikelets* laterally compressed, distichous, with two or more perfect florets. *Glumes* 2, unequal, membranaceous, shorter than the florets. *Glumellas* 2, membranaceous, naked at the base; *outer* one keeled, entire, pointed or with a straight subterminal bristle. *Caryopsis* free."—*Br. Fl.*

1. *K. cristata*, Pers. *Crested Köhleria*. "Panicle interrupted below, outer glumella acute 3-ribbed, leaves narrow ciliated on

the margins or hairy."—*Br. Fl.* p. 531. *Aira, E. B.* t. 648. *Airochloe, Link.* *Poa cristata, Host. Gram. Aust.* ii. 54, t. 75.

On dry, elevated, sandy or chalky pastures and downs. *Fl.* June, July. 24.

E. Med.—Abundant on Bembridge, Brading and Yaverland downs. On the edges of the cliff above Sandown bay, on the (ferruginous?) sandstone, plentifully. Abundant also along the top of the cliff between Niton and Old park.

W. Med.—In the Lenten pit, by Carisbrook. Freshwater down.

A small species, from 4 to 8 inches in height. *Root* a little tufted and creeping, with long downy fibres. *Culms* simple, erect or ascending, mostly geniculate at the lower joints, round, slender, striated, covered with fine spreading down, especially between the branches of the panicle, often quite glabrous in the lower part. *Root-leaves* tufted, hardly $\frac{1}{4}$ th part the height of the culm, very narrow, tapering and hairy, rough or nearly smooth along the edges and keel; those of the culm about 2, the uppermost towards the middle, the lower one near the base, of the culm, extremely short, broad and pointed in my specimens (as in Knapp's figure, though drawn narrow in *E. B.*), ribbed, flat and hairy, with long, tumid, downy sheaths. *Ligule* very short. *Panicle* erect, an inch to 2 inches long (4 or 5, *Sm.*), compact, subspicate, subcylindrical, with a silvery gray aspect, of several sets of short, half-whorled, compound branches. *Glumes* unequal, lanceolate, acuminate, compressed, greenish, with purple edges, each with a strong, dorsal, green rib, their keels roughish or hairy; the inner and larger glume 3-ribbed at the base. *Florets* rarely more than 2, sometimes 3, scarcely exceeding the glumes, their outer *palea* resembling the larger or inner glume in form and colour, and in being, like that, 3-nerved; *inner valve* thin, white, chaffy, deeply bifid, the margins sharply folded their entire length, and serrated along the back of each duplication. *Anthers* purplish. *Stigmas* simple, spreading or deflexed,

XIV. MELICA, Linn. Melic-grass.

"*Panicle* lax. *Spikelets* ovate, awnless, with 1—2 perfect *florets*, and a club-shaped rudimentary neuter one. *Glumes* 2, nearly equal, shorter than the *florets*, several-nerved. *Glumellas* 2; outer one rounded on the back, entire at the end, at length cartilaginous and enclosing the free *caryopsis*."—*Br. Fl.*

1. *M. uniflora*, Retz. *Wood Melic-grass.* *Panicle* branched slightly drooping, *spikelets* ovate erect with only one perfect *floret*. *Sm. E. Fl.* i. p. 112. *Br. Fl.* p. 529. *Lind. Syn.* p. 307. *E. B.* xv. t. 1058. *Curt. Fl. Lond.* fasc. 5, t. Knapp, *Gram.* *Brit.* t. 41. *Host. Gram. Aust.* ii. 9, t. 11. *Parn. Gr.* t. 18.

In shady woods and lanes; frequent. *Fl.* May, June. 24.

A slender, elegant grass. *Root* of many entangled, white and jointed rhizoms, creeping horizontally, often somewhat bulbous, emitting copious capillary branched fibres. *Culms* several, nearly erect, weak, slender, a foot or 18 inches high, simple, compressed, striated, slightly hairy beneath. *Leaves* narrow, bright green, taper-pointed, thin, flat, downy above and on the edges, smooth and ribbed beneath, with close striated *sheaths*. *Ligule* short, truncate, with an elongated subulate point opposite the leaf, a peculiarity of rare occurrence in other grasses. *Panicle* terminal, about a span long, of very few distant, binary, nearly simple, slightly flexuose branches, leaning to one side but scarcely drooping, slender and roughish: one branch of each pair is usually shorter than the other or sometimes nearly wanting, and bearing an abortive *spikelet*; these last are ovate, erect, tremulous. *Glumes* unequal, purplish; superior boat-shaped, somewhat awned, 4-ribbed, with a roughish keel; inferior ovato-lanceolate, 2-ribbed. *Perfect floret* sessile, its *palea* rather unequal, green; superior or inner one 2-ribbed, downy, deeply grooved behind a reduplication *floret*; inferior or outer valve very hollow

or concave, sprinkled with glandular dots but not downy, bluntish. *Anthers* pale yellow. *Germen* oblong. *Styles* long, spreading; *stigmas* elegantly feathered. *Scale* very broad, truncate and entire, fleshy, half-surrounding the ovary. *Abortive floret* a pedicellate colourless valve, enclosing another, if not a third, rudimentary floret like itself, the outermost embraced by the dorsal groove of the superior palea of the perfect floret.

This species, as growing exclusively in woods and shady places, is a grass of no agricultural importance.

XV. MOLINIA, Mœnch. Molinia.

"*Panicle* somewhat contracted or spreading. *Spikelets* awnless, oblong-cylindrical, with 1—5 (or more) *perfect florets*, and usually a subulate rudimentary upper *neuter* one. *Glumes* 2, acute, shorter than the florets, unequal, 1-nerved. *Glumellas* 2; outer one rounded on the back, glabrous, entire at the end, at length cartilaginous and covering the free *caryopsis*."—*Br. Fl.*

1. *M. cœrulea*, Mœnch. *Purple Molinia*. "*Panicle* erect somewhat contracted, spikelets erect, outer glumella usually 3-nerved, culm with one knot near the base."—*Br. Fl.* p. 528. *Melica cœrulea*, L.: *Host. Gram. Aust.* ii. 7, t. 8. *E. B.* t. 750.

β. Leaves longer and less rigid, panicle green. *M. (Enodium) cœruleum*, var. *atrovirens*, Dumort?

On heaths, moors, and in barren sandy or gravelly pastures and woods. *Fl.* July, August. 4.

E. Med.—Abundant on Stapler's heath, Apse heath, and Lake common.

W. Med.—Heathy places about Kingston and in Parkhurst forest, abundantly.

β. In shady situations. Plentifully on the Wilderness. Parkhurst forest, in the fir-plantations.

A hard, coarse, rigid grass, conspicuous for its dark bluish purple or violet hue. *Root* of many yellowish, thick, flexuose, remarkably tough and wiry fibres. *Culms* a foot to 3 feet high, erect, round, smooth, finely striated, bent below the single tumid joint a little above the base. *Leaves* few, only near the base of the culm, linear-lanceolate, tapering to a long point, bluish green, longer than their purplish sheaths, roughish, hairy or naked on the upper side, short and very rigid in α., longer, narrower and more flexible in β. *Ligule* a row of short bristles. *Panicle* 2 to 6 or 8 inches long, purple or green, spike-like, of many close-pressed wavy branches, with rough, angular, partial stalks. *Spikelets* upright, linear, acute. *Glumes* much shorter than the florets, inner one rather the longer of the two. *Paleæ* unequal; outer one 3-ribbed, acute; inner 2-ribbed, flat, membranous, slightly bifid. *Stigmas* short, but little branched, sometimes purple-coloured like the anthers, a circumstance unusual, I believe, in grasses. *Uppermost floret* on a hairy pedicel, empty or rudimentary.

A large proportion of the grass in Parkhurst forest consists of this species, which, under the trees in the extensive plantations (principally fir) in that enclosure, becomes far less rigid, with larger leaves, and with little or none of the usual violet or deep purple of the plant in more open situations. I presume this to be the *Mol. (Enodium) cœruleum* var. *atrovirens* of Dumortier. Like *Catabrosa aquatica*, this plant has been the sport of system, having been a *Melica*, *Aira*, *Festuca*, *Poa*, *Arundo*; from its affinity to all uniting itself completely with none, and hence properly made a genus apart.

XVI. *HOLCUS*, Linn. Soft-grass.

"*Panicle* lax. *Spikelets* laterally compressed, 2-flowered. *Glumes* 2. *Lower floret* perfect, triandrous: *glumellas* 2; outer one awnless or very rarely awned. *Caryopsis* covered by the indurated *glumellas*."—*Br. Fl.*

1. *H. lanatus*, L. *Meadow Soft-grass*. "Glumes rather obtuse mucronate, awn of barren floret included within the glumes at length curved glabrous except near the end, no tuft of hairs at the joints, root fibrous."—*Br. Fl.* p. 530. *E. B.* t. 1169. *Host. Gram. Aust.* i. p. 2, t. 2.

In meadows, pastures, woods, and about hedges; everywhere. *Fl.* June, July. 24.

Florets surrounded by 4 or 5 simple bristles at their base, which rise to half the height of the floret, or sometimes even surpass it.

It cannot be said that there is no tuft of hairs at the joints of the stem in *H. lanatus*, the pubescence in that part being visibly more copious, though a less prominent feature than in *H. mollis*, because it is contrasted with the want of down on the parts immediately contiguous.

2. *H. mollis*, L. *Creeping-rooted Soft-grass*. "Glumes acuminate, awn of the barren floret exerted at length geniculate scabrous all over, joints of the culm with a tuft of hairs, root creeping."—*Br. Fl.* p. 529. *E. B.* t. 1170. *Host. Gram. Aust.* i. p. 3, t. 3.

β. Sheaths villous.

In woods, meadows and pastures; less frequent than the preceding. *Fl.* July. 24.

β. Hedge opposite Cherrygin cottages, near Ryde, 1850, *Dr. Bell-Salter*!! In this specimen, though the sheaths were very hairy, the tuft at the nodes, so characteristic of the species, was very apparent.

Florets, especially the uppermost imperfect ones, seated in a rather copious fascicle of white hairs, scarcely $\frac{1}{4}$ th the length of the glumes.

XVII. *ARRHENATHERUM*, P. de Beauv. False Oat-grass.

"*Panicle* lax. *Spikelets* laterally compressed, 2-flowered, with an upper rudimentary neuter one. *Glumes* 2, nearly equal, membranaceous, as long as the florets. *Lower floret* barren, triandrous: *glumellas* 2; outer one with a long twisted geniculate awn above the base. *Upper floret* perfect, triandrous: *glumellas* 2; outer one with a short straight bristle below the point."—*Br. Fl.*

1. *A. avenaceum*, Beauv. *False Oat-grass*. "Leaves flat."—*Br. Fl.* p. 530. *Avena elatior*, L. *Holcus avenaceus*, Scop. *E. B.* t. 813. *Host. Gram. Aust.* ii. 36, t. 49.

β. *bulbosum* (Vect. *Knot-grass*). Culms bulbous at base. *A. bulbosum*, *Host. Gram. Aust.* iv. 18, t. 30.

A very common grass in meadows, thickets, hedges, and on banks by roadsides, &c. *Fl.* June, July. 24.

This species once obtained a partial and transient reputation in the United States for artificial pasture, under the aspiring name of Grass of the Andes: some of the American farmers have reported favourably of it, from its power of resisting

the extremes of heat and cold incident to that climate. It has not however come into general use with them, nor is it likely to supplant the Timothy- and other fine meadow-grasses, long tried and approved of by agriculturists of both continents.*

††† *Glumes 3- or mostly many-flowered.*

a. Panicle close, compact or spiked.

XVIII. TRIODIA, R. Brown. Heath-grass.

"*Panicle racemed. Spikelets compressed, with 2—4 fertile florets. Glumes 2, about equal, 3-ribbed, as long as the florets. Glumellas 2; outer somewhat coriaceous, rounded on the back, hairy at the base, 3-toothed at the summit; teeth nearly of the same length, middle one straight (sometimes bristle-shaped).*"—*Br. Fl.*

1. *T. decumbens*, P. de Beauv. *Decumbent Heath-grass.*
"Panicle of few racemed spikelets, ligule a tuft of hairs." — *Br. Fl.* p. 540. *Poa*, *E. B.* t. 792.

On dry heaths and hilly pastures, not, I believe, uncommon; also in boggy moory ground. *Fl.* June, July. 24.

E. Med.—Firestone copse. On the down above the Culver cliff. Grounds at the Priory.

W. Med.—Heathy ground between Yarmouth and Newtown. Bog at Cockleton, near Cowes. Plentiful amongst the furze on Colwell heath, especially on its N.W. corner, close to the bay.

Root tufted, with copious fibres. *Culms* from 6 to 12 or 15 inches long, at first decumbent, but when in flower erect or inclining, a little compressed, smooth and polished, leafy. *Leaves* narrow, linear, pointed, rough-edged, quite flat at their base, a little folded towards the tip, with a strong keel running their entire length, their edges and close rather long sheaths beset with fine, soft, white hairs as in *Bromus erectus*: they are, moreover, remarkable for having their upper surface of a pale glaucous, the under of a full deep green colour, the reverse of which is the case with leaves in general. *Ligule* a mere fringe of extremely short hairs. *Panicle* terminal, racemose, of a few short, close, roughish branches, bearing each from 1—3 erect spikelets, that are usually 4- or 5-flowered. *Glumes* nearly equal, ovato-lanceolate, acute, with broad, purplish, membranous edges, 3-ribbed, quite smooth and shining, with a little roughness on the keel only; about as long as the included florets. *Palea* very unequal; *outer* one ovate, deeply concave, many-ribbed, with three teeth at the apex, the central one either of equal length with the two lateral or produced into a short awn-like point; at the base of the valve on either side is a pencil of fine white hairs; *inner* palea flat, membranous and diaphanous, closely applied to the outer, more or less obtuse, strongly ciliated along its edges, which towards the base of the valve are inflexed, much thickened and glandular, embracing the short pedicel of the floret next above it; a dark green very strong nerve runs parallel with its outer margin to within a short distance of the apex of the valve, originating in the thickened inflexed portion of it above-mentioned.

* See Cuthbert Johnson's 'Agriculture,' American edition, by Dr. Emerson, of Philadelphia.

XIX. *DACTYLIS*, Linn. Cock's-foot-grass.

"*Panicle* with the secondary branches short and very dense, subsecund. *Spikelets* with 3 or more florets, compressed, without a bractea at the base. *Glumes* 2, unequal, shorter than the spikelet; outer one keeled. *Glumellas* 2; outer one keeled, and ciliated at the back, 5-nerved, lanceolate, with a short bristle close to the point, enclosing the *caryopsis*."—*Br. Fl.*

1. *D. glomerata*, L. *Rough Cock's-foot-grass*. "Branches of the panicle with ovate clusters of spikelets, leaves linear flat the margins scabrous, stem erect, root tufted."—*Br. Fl.* p. 541. *E. B. t.* 335. *Host. Gram. Aust.* ii. 67, t. 94.

In woods, meadows, pastures, waste places, and by roadsides, everywhere. *Fl.* June—August. 2f.

XX. *CYNOSURUS*, Linn. Dog's-tail-grass.

"*Panicle* spiked, unilateral. *Spikelets* with 2—5 perfect florets, distichous, with a pectinated bractea or involucre (an abortive spikelet) at its base. *Glumes* 2, equal, membranaceous, much shorter than the spikelet, 1-nerved, keeled, shortly awned. *Glumellas* 2, membranaceous, linear-lanceolate; outer awned below the extremity or mucronate, faintly 5-nerved."—*Br. Fl.*

1. *C. cristatus*, L. *Crested Dog's-tail-grass*. "Raceme in a linear spike, florets with a very short awn."—*Br. Fl.* p. 542. *E. B. t.* 316. *Host. Gram. Aust.* ii. 68, t. 96.

In dry pastures, hayfields, and by waysides; extremely common. *Fl.* June, July. 2f.

β. *Panicle* lax, spreading or divaricate.

XXI. *POA*, Linn. Meadow-grass.

"*Glumes* shorter than the lowest flower," "rather unequal. *Outer pale* with 3 or 5 parallel nerves, membranous below, scarious at the tip, compressed, keeled, unarmed." "*Styles* very short," "terminal."—*Bab. Man.*

A. *Florets* not webbed.

1. *P. annua*, L. *Annual Meadow-grass*. "Panicle subsecund divaricated somewhat triangular, spikelets oblong-ovate of about 5 florets which are a little remote 5-ribbed destitute of web, the midrib and all the nerves more or less silky, upper sheath longer than its leaf, ligule oblong acute, culm ascending compressed, root fibrous."—*Br. Fl.* p. 540. *E. B. t.* 1141.

In meadows, pastures, streets, courtyards, and under walls; the commonest of grasses. *Fl.* January—December. ☉.

B. Florets webbed.

2. *P. pratensis*, L. *Smooth-stalked Meadow-grass*. "Panicle diffuse, spikelets oblong-ovate of about 4 florets which are acute 5-nerved webbed, marginal nerves and keel of the outer glumella silky, culm and sheath smooth, upper sheath much longer than its leaf, ligule short, root creeping." — *Br. Fl.* p. 537. *E. B. t.* 1073.

β. Slender; leaves long, very narrow; panicle lax; spikelets smaller and narrower. Var. II. *angustifolia*, Gaud. *Fl. Helvet.* ii. p. 259. *P. angustifolia*, *Lin.*?

γ. Leaves rigid, subglaucous. Var. III. *strigosa*, Gaud. *Fl. Helvet.* ii. p. 260. *P. subcærulea*, *Sm.*?

An abundant species in meadows and pastures. *Fl.* "June, July." — *Br. Fl.* 24.

β. Frequent in woods and shady places, and apt, I think, to be taken for *P. nemoralis*.

γ. On wall-tops and other dry barren places. About Cowes, Thorley, Yarmouth, &c.

In γ. the leaves are shorter than the stem, rigid and subglaucous; the panicle small and compact; and the calyx very acute, with mostly three copiously webbed florets. A somewhat similar but very dwarf form of *P. pratensis* abounds on dry sand by the sea at Ryde, &c., with short, flat, rigid leaves, and a short, triangular, spreading panicle. The former of the two has, I conceive, been repeatedly taken for *P. compressa*, as was indeed done by myself; the latter runs a chance of being confounded with *P. bulbosa* by those unacquainted with the true plant of that name.

3. *P. trivialis*, L. *Rough-stalked Meadow-grass*. "Panicle diffuse, spikelets oblong-ovate of about 3 florets which are acute 5-nerved connected by a web, outer glumella silky only on the midrib, sheath much longer than its leaf, culms and sheaths roughish, ligule oblong acute, root fibrous." — *Br. Fl.* p. 538. *E. B. t.* 1072. *Host. Gram. Aust.* ii. 45, t. 62.

In meadows, pastures and moist shady places; common. *Fl.* June, July. 24.

In a bundle of this species pulled in a cornfield near Ryde the glumes were invariably 2-flowered, as Smith remarks is occasionally the case.

4. *P. bulbosa*, L. *Bulbous Meadow-grass*. "Panicle close subspicate, spikelets ovate 3—4 flowered, florets silky at the keel and marginal nerves connected by a web, leaves with a white narrow serrated cartilaginous margin, upper sheath much longer than its leaf, ligule prominent acute, stems swollen at the very base." — *Br. Fl.* p. 538. *E. B. t.* 1071.

Fl. April, May. 24.

E. Med. — On the sandy pasture-ground of the spit at St. Helens, *Dr. Bell-Salter*, 1850 !!!

Grass glabrous. Root somewhat creeping, emitting small, ovoid, bulb-like offsets, with a tuft of slender fibres at their base, being the enlarged and fleshy bases of the leaves concentrically wrapped together. Culms erect, from about 4 to 8 or 9 inches high, extremely slender, terete, perfectly smooth, glabrous and polished, naked at top, mostly purplish, as are the long, close, striated sheaths; usually geniculate near the base. Leaves of the stem very few and small, the uppermost very distant, often extremely minute; those of the root and of the bulbous offsets

numerous, fascicled, much shorter than the culms, about a line in breadth, flat-tish or somewhat conduplicate, bright green, with a slightly glaucous tinge, acute, minutely serrato-spinulose along their narrow cartilaginous margins, mostly wavy or curved and suberect or spreading at various angles to their long, pale or purplish, strongly ribbed and sheathing bases. *Ligule* oblong-lanceolate, acute, clasping, decurrent, entire or torn. *Panicle* terminal, very small, from about $\frac{1}{4}$ to $1\frac{1}{2}$ inch in length, close and spike-like before (and after?) flowering,* spreading when in bloom, the branches short, semiverticillate, mostly in pairs, tumid and cartilaginous at their junction with the rachis, simple or very slightly compound, the lower ones sometimes considerably distant from the rest, subangular and flexuose like the rachis, and, with the latter, smooth or beset with a few scattered spinules merely; said to be often proliferous in other countries. *Spikelets* ovate, compressed, 3—4 flowered, acute, florets longer than the glumes. *Glumes* about equal, deeply concave, acute, green, with very broad membranous margins more or less tinged with purple, glabrous, rough on the upper part of the acute keel with a few spinules, sometimes smooth; 3-ribbed, the two lateral ribs about half the length of the glume, and about half the distance between the dorsal rib and the slightly erose margin of the glume. *Florets* longer than the glumes, the uppermost one pedicellate. *Paleæ* very unequal, the lower and outer one much the larger and nearly similar to the glumes in form, glabrous excepting at the base and along the acute keel, where it is clothed for a considerable distance upwards with white hairs, those at the base long, loose and cottony, on the back shorter, straight, erect and finger-like, very obscurely 5-ribbed, so faintly indeed as to appear nearly obsolete; *inner pale* narrow elongato-oblong, glabrous, rather shorter than the outer, diaphanous, with two green, finely spinulose, ciliated ribs bounding its inflexed margins, the apex entire, acute or torn, and often bifid. *Stamens* finally much protruded on their long, slender, white *filaments*; *anthers* yellow or purplish, cells conjoined in the middle for nearly half their length. *Styles* feathery, scarcely compound, the branches simple, distant, spinulose. *Germens* minute, ovoid, subglobose.

This humble and inconspicuous but interesting species is not easily detected by such as are unacquainted with its habits and appearance in a living state, for which reason it has probably been overlooked in many a spot productive of it. I cannot find any figure of this grass conveying a just idea of its aspect excepting that old one of Vaillant (Fl. Par. t. 17, fig. 8): those of 'English Botany,' Knapp and Parnell are all very defective: that of Host. Gram. Aust. ii. t. 65, if not a different species, is a gigantic variety, with infinitely broader leaves, larger panicle, and every part expanded in proportion. Before the panicle opens, the appearance of this part is that of a dwarf specimen of *Kœhleria cristata*, or even somewhat resembling *Aira præcox*, but when in flower the similarity is no longer obvious, and the plant might pass at a hasty glance for a contracted form of *P. annua*, or still more of *P. compressa*.

5. *P. compressa*, L. *Flat-stemmed Meadow-grass*. "Panicle subsecund spreading (afterwards subcoarctate), spikelets oblong of 5—7 obtuse florets, upper sheath as long as or shorter than its leaf, culm compressed, root creeping."—*Br. Fl.* p. 537. *E. B. t.* 365. *Host. Gram. Aust.* ii. 51, t. 70.

On dry barren fields, wall-tops and banks; rare? *Fl.* June, July. 24.

W. Med.—Abundantly in a dry elevated field above the southern extremity of Swainston park, and near Rowledge barn, *Dr. Bell-Salter*, Sept., 1843!!!

* In this state Mr. Borrer remarks that the panicle resembles that of *Kœhleria cristata*, only it is much smaller.

XXII. SCHLEROCHLOA, *P. de Beauv.* Meadow-grass.

"Glumes shorter than the lowest flowers," "unequal membranaceous. Outer pale with 5 faint but distinct and parallel nerves, membranous, cylindrical below, unarmed, often keeled at the tip or with a very minute mucro." "Styles very short," "terminal." —*Bab. Man.*

1. *S. rigida*, L. *Hard Meadow-grass.* "Panicle lanceolate (or sometimes a simple linear spike-like raceme) disticho-secund (rigid), spikelets linear acute of 7—10 florets, outer glumella faintly 5-nerved obtuse with a mucro, glumes acute unequal, upper one reaching to the base of the third floret, root fibrous." —*Br. Fl.* p. 536. *E. B.* t. 1371. *Host. Gram. Aust.* ii. 53, t. 74.

On dry barren and waste ground, walls, rocks and cliffs. *Fl.* June. ☉.

E. Med. — Amongst the ruins of Quarr abbey. On the Dover, Ryde. On cliffs near Ventnor, St. Lawrence, &c. On the wall or bank of masonry below the church at Newchurch, in considerable plenty, 1843. At Yarbridge, 1845. By the roadside between Niton and Blackgang, at the foot of the stone walls, pretty abundantly, 1842.

W. Med. — Abundant in dry chalky fields at the foot of High down, between the Needles hotel and Alum bay. Cornfield near Calbourne New Barn. Shide chalk-pit, &c.; rather common throughout the island: *B. T. W.*

2. *S. loliacea*, Huds. *Dwarf Wheat Meadow-grass.* "Spike rigid usually simple unilateral (rarely branched), spikelets linear-oblong of about 8—12 florets, outer glumella faintly 5-nerved obtuse with a mucro, glumes obtuse nearly equal, upper one reaching to the base of the fourth floret, root fibrous." —*Br. Fl.* *Poa*, *Br. Fl.* p. 537. *Triticum loliaceum*, Sm.: *E. B.* t. 221.

On dry barren ground, walls, cliffs and pastures by the sea. *Fl.* June, July. ☉.

E. Med. — On Ryde Dover, sparingly. Sandown bay. St. Catherine's point, not far from the new lighthouse. St. Helens, *Dr. Macreight*, Man. of Br. Bot., where I also find it, July, 1839. [On the earthy top of the sea-wall close to Puckpool wicket, near Ryde, *Dr. Bell-Salter*. The Esplanade, Ventnor, *id.* — Edrs.]

W. Med. — Yarmouth, *D. Turner, Esq.*, B. T. W. [Compton bay, *Dr. Bell-Salter*, Edrs.]

A small stiff grass, with much of the habit of *P. rigida*. Root of many slender downy fibres. Stems several, 3—6 inches high, smooth and shining, clothed for the most part with the long close sheaths of the leaves. Leaves linear, flat, many-ribbed and smooth at the edges. Spikes erect, of many rather distant lanceolate spikelets, unilateral on the angular flexuose rachis; the lower ones usually compound or 2 or 3 together, the uppermost single. Glumes 8—10 flowered, nearly equal, obtuse, much shorter than the florets, each with four or five strong dark green ribs, variable in breadth, the two middle ones much the longest. Palea green edged with white; outer one obscurely 5-ribbed, smooth at the margin, concave, obtuse; inner one flat, 2-ribbed, a little pointed, bristly on the edges. Styles 2, distant; stigmas branched.

The whole plant in very dry seasons or places assumes a deep purple colour.

3. *S. procumbens*, Curt. *Procumbent Sea Meadow-grass.* Panicle compact ovato-lanceolate, the branches 2-ranked unilateral, spikelets secund linear-lanceolate of about four florets which are

5-ribbed. *Poa*, *E. B.* viii. t. 532 (opt.). *Parn. Gr.* t. 42. *Br. Fl.* p. 536. *Br. Fl.* p. 536. *P. rupestris*, *With.* tab. xxvi. ed. 7th (bona).

On waste ground and at the foot of walls, houses, &c., near the sea; not uncommon. *Fl.* June, July. ☉.

E. Med.—In the marsh-meadows at the back of Dover, at Ryde, but not abundant there, 1844. On the Dover, and edges of the pavement in Dover street. By the White House at E. Cowes, and in various other places about that town. [On the wall between Salterns and Sea View, plentifully, *Dr. Bell-Salter*, Edrs.]

W. Med.—Under the wall by the Yacht Club, W. Cowes, and on waste ground in front of it, plentifully.

4. *S. Borreri*, Bab. *Borrer's Sea Meadow-grass*. Panicle spreading in fruit ascending and patent, spikelets linear of about four flowers, florets free, outer glume of the corolla obsoletely 5-nerved with a minute point, root fibrous. *Poa*, *Br. Fl.* p. 536. *Glyceria*, *Babington: E. B. Suppl.* t. 2797.

In muddy salt-marshes about the edges of drains and ditches. *Fl.* July—October. ☿?

E. Med.—On the ooze of the ditch on the Dover, at the end of Mockton street, just by Harris yard, sparingly. On marsh-meadows behind the Dover, with *P. distans* and *P. procumbens*, but not observed plentifully, 1844. [On the sea-wall between Salterns and Sea View, constantly, *Dr. Bell-Salter*, Edrs.]

W. Med.—Newtown marshes. Abundant in the first meadow, or that nearest the sea, at Freshwater gate. Freshwater, *W. Borrer, Esq.* (Bab. in *E. B.*)

Mr. Babington's description of this grass is so excellent and complete that I gladly avail myself of his remarks, observing at the same time that in so doing I do not adopt the species implicitly as distinct from *P. distans* or even *P. maritima*, but rather confess myself sceptical on the subject, seeing how strongly it partakes of the characters of both those grasses, and, as Mr. Borrer observes, of *P. procumbens* also.

Root fibrous or occasionally very slightly creeping. Culms 1 or several, nearly erect, ascending or spreading, often so near the ground as to appear prostrate, from 6 to 18 inches or more in length, straight, rigid, round or slightly compressed, smooth and shining, in drier situations often with a tinge of purple, geniculate at one or two of the lower joints, naked for a considerable distance beneath the panicle. Leaves linear, flat, roughish above and along the margins; those on the upper portion of the stem few, short, distant, on very long, loose and furrowed sheaths. Ligule short, broad and truncate, slightly torn or sometimes bifid. Panicle of several distant, alternate, half-whorled sets of slightly compound branches, that are at first erect, afterwards patent or spreading at various angles, rigid, angular and scabrous, with a yellow glandular tumidity in the axil of each branch on its upper side. Spikelets small, ovate or ovato-lanceolate rather than linear (nor are they so drawn in the 'Supplement to English Botany,' the figure in which, though small, is excellent), 3—5 flowered, usually more or less tinged with purple, falling away from the calyx when beginning to dry or soon after gathering. Calyx much shorter than the florets, its glumes very unequal, smooth, membranaceous and concave; exterior and smaller one with a single strongly marked central rib, often scarcely extending to the acute apex; interior and larger glume 3-ribbed, the middle rib reaching to the obtuse summit, the two lateral terminating about $\frac{1}{3}$ rd below it. Palea smooth.

Named by Mr. Babington after its discoverer and our mutual friend, Wm. Borrer, Esq., one of the most acute botanists of the present day.

5. *S. maritima*, Huds. *Creeping-rooted Sea Meadow-grass*. "Panicle erect subcoarctate (rigid), spikelets linear of 5—10 obtuse apiculate florets which are faintly 5-nerved, the midrib

reaching to the point, leaves usually convolute, root creeping."
—*Br. Fl.* p. 535. *E. B.* t. 1140. *Sclerochloa*, *Lind.*

β. Stem diffuse, almost prostrate; branches strongly deflexed. *Fl. Dan.* xiii. t. 2222? (*P. distans*).

In moist pastures by the sea, and in salt-marshes. *Fl.* July—October. 24.

E. Med.—Brading, *B. T. W.*

W. Med.—Shores of Yarmouth harbour above the mill. Plentiful in the salt-marshes at Newtown, and very fine about the edges of the brine-pits, &c., 1842. In abundance by Yarmouth, *B. T. W.*

β. At the farthest extremity of St. Helens spit, on the beach near the inn. This I gathered for *P. distans*, but Mr. Borrer regards it rather as a variety of the present species.

6. *S. distans*, *L.* *Reflexed Meadow-grass.* "Panicle spreading, branches at length deflexed, spikelets linear of about 5 (3—6) obtuse florets which are faintly 5-nerved, the midrib not reaching to the points, leaves mostly plane, stem decumbent at the base, root fibrous."—*Br. Fl.* p. 535. *E. B.* t. 986. *Host. Gram. Aust.* ii. 46, t. 63.

Sandy pastures and waste ground, chiefly near the sea. *Fl.* July, August. 24.

E. Med.—In the marsh-meadows behind the Dover, Ryde, abundantly. Along the terrace-walk by the shore at the bottom of Pelham fields, *Rev. G. E. Smith !!!* Near Sea View. [On the wall at, and about the mill at, St. Helens, plentifully, *A. G. More, Esq.* On the new wall under Marina wood from Apley to St. Clair, near Ryde, abundantly, *Dr. Bell-Salter, Edrs.*]

W. Med.—Salt-marshes by Newtown, 1842. Between Yarmouth and Thorley, in a wet spot at the eastern end of Stopler's copse, 1845.

Root yellowish, fibrous or very slightly creeping. *Culms* several, leafy, slender, obliquely ascending, spreading or decumbent and more or less geniculate at the base, from a span to 12 or 15 inches long, round, smooth and shining. *Leaves* short, pale green and somewhat glaucous, taper-pointed, deeply sulcato-striated and scabrous on their upper side and along their margins with minute spinules pointing forwards,* flat, especially the stem-leaves, those at the root usually involute, and all becoming so after being some time gathered; their *sheaths* long, smooth, spirally folding the stem, and slit the greater part of their length downwards. *Ligule* short, broad, very obtuse and almost truncate, entire or a little torn (now and then bifid, *Curt.*) *Panicle* from 3 to 6 inches or more long, of several distant half-whorled sets of angular, roughish, somewhat flexuose, slightly compound branches, naked below, usually about five together in the lowermost whorl or two, diminishing in length and number towards the apex of the panicle, which thus appears pointed, their bases swollen and cartilaginous; at first erect or coarctate, but strongly and rigidly deflexed for the most part when in full flower. *Spikelets* sublinear-oblong, 4- to 6- or 7- (mostly about 5-) flowered, pressed against the branches, flattened, variegated with glaucous-green, white and purple colours, sometimes all greenish. *Calyx-glumes* very unequal, membranous, obtuse, hollow, minutely spinulose on the margin, glabrous; *inner*, upper and larger 3-ribbed, the two lateral ribs short; *outer*, lower and smaller glume single-ribbed, about half the length of the *inner*. *Florets* very small, on smooth pedicels, rather remote, elliptical, quickly falling away from the spikelets as in *P. Borreri*, hairy at the base but not webbed. *Inferior* and *outer palea* ovate, deeply concave, very obtuse, almost truncate, the summit membranous and unevenly notched, 5-ribbed, the central rib reaching the summit, the rest still shorter; *superior* and *inner palea* as long as the outer, obtuse or truncate, membranous and pellucid, with a strong lateral green rib at its reduplicate margin, ciliate with a row of spinules pointing

* Mr. W. Wilson, in 'Phytologist,' vol. i. p. 294, says the leaves of *P. distans* have seven prominent rough ribs, of which *P. maritima* is destitute.

upwards along its external side. *Anthers* pale yellow or purplish. *Styles* distant, shortish, in my specimens not very much branched or feathery.

XXIII. GLYCERIA, R. Br. Floating Meadow-grass.

"*Glumes* shorter than the lowest flower," "unequal submembranous. *Outer pale* with 5—7 strong prominent distinct ribs, and a scarious margin, subcylindrical, unarmed." "*Styles* very short," "terminal."—*Bab. Man.*

1. *G. fluitans*, Scop. *Floating Meadow-grass*. "*Panicle* secund slightly branched very long, branches nearly simple roughish, spikelets linear of 7—12 flowers adpressed, flowers lanceolato-oblong acute, outer pale nearly thrice as long as broad, sheaths compressed."—*Bab. Man.* p. 392. *Br. Fl.* p. 534. *E. B. t.* 1520.

In ponds, ditches, slow streams and low wet meadows; frequent. *Fl.* June—September. 4.

2. *G. plicata*, Fries. *Plaited Floating Meadow-grass*. "*Panicle* compound, branches compound nearly smooth erect when in flower divaricate with fruit, spikelets linear of 7—20 flowers, flowers oval oblong blunt, outer pale twice as long as broad, sheaths compressed."—*Bab. Man.* p. 392. *P. fluitans* β., *Br. Fl.* p. 534.

In like places with the last; rare? *Fl.* "June—Sept."—*Bab.*

[Near the sluice at Brading, sparingly, *A. G. More, Esq., Edrs.*]

With the characters and appearance of this newly discovered species (from *G. fluitans*) of Fries I am as yet practically unacquainted, but, from the descriptions of the assigned distinctions, the diversity of opinion respecting its claims, and, above all, from the remarks in the sixth edition of the 'British Flora,' I should fear *G. plicata* was one of those species which so abound in the pages of systematic botanists, but are ignored in the volume of Nature's own inditing.

XXIV. BRIZA, Linn. Quaking-grass.

"*Panicle* lax. *Spikelets* much compressed, ovate or deltoid, with 3—8 closely imbricated florets. *Glumes* 2, nearly equal, broad, much shorter than the spikelet. *Glumellas* 2, awnless; *outer* cymbiform, obtuse, at length coriaceous and rounded on the back below, with a scarious margin; *inner* small and flat. *Caryopsis* adnate with the *glumellas*."—*Br. Fl.*

1. *B. media*, L. *Common Quaking-grass*. *Quakers*. *Vect. Rattle-grass*. *Maiden's-hair*. *Totter-grass*. Spikelets broadly ovato-triangular, glumes shorter than the lowermost florets, culms leafless in their upper part and like the branches of the diffuse distant-flowered panicle nearly smooth, anthers exserted, ligule short abrupt, root perennial. *Sm. E. Fl.* i. p. 133. *Br. Fl.* p. 541. *E. B. v. t.* 340. *Host. Gram. Aust.* ii. 22, t. 29. *Parn. Gr. t.* 30.

In dry barren fields or heathy pastures, and in meadows; very common. *Fl.* June. 4.

Root perennial, tufted with copious slender, branched, downy fibres, and some-

what creeping. *Culms* 1 or 2, erect, from about 10 to 18 or 20 inches high, round, slender, striate, somewhat rigid, shining and glabrous, pale green or purplish; always, when fully grown, naked or leafless to a greater or less distance below the panicle. *Leaves* linear, erect, of a pale somewhat glaucous green, acute, roughish above and along their edges, flat, those of the stem few (4 or 5), short, the uppermost one extremely so and lanceolate or triangular-lanceolate, often very minute, those of the root-suckers longer. *Sheaths* smooth, ribbed and striate, close or but slightly inflated, that of the superior leaf extremely elongated, of the rest less extended, but always shorter than the internodes. *Ligule* extremely short (about a line in length), truncate and obtuse (rarely elongated and acute, *Bab.*), entire or erose, torn, and in its adnate portion sheathing the culm. *Panicle* not much compounded, erect, mostly of a pyramidal or triangular outline, of a few distant, alternate, divaricate pairs of spreading or patent, capillary, slightly scabrous branches, mostly, like the rachis, of a purplish tinge, straight or slightly flexuose, angular, the lowermost pair or two simple or undivided for a considerable distance from their tumid cartilaginous bases, beyond that sparingly and divaricately ramified, those at the apex of the panicle very short and quite simple. *Spikelets* compressed, mostly 7-flowered, nodding or pendulous on the hair-like, wavy and ultimate branches of the panicle, rather larger, far fewer and more distant than in *B. minor*, ovate, ovato-triangular or ovato-rotundate, acute or obtuse, glabrous, prettily variegated and shining with green, white and purplish brown, sometimes pale green. *Florets* imbricated, sessile. *Glumes* equal, glabrous, shorter than the two inferior florets, their extreme breadth forming the base of a triangle whose sides if described would intersect the points of the latter, hence giving to each spikelet a more truly ovate figure than those of *B. minor*; boat-shaped, purplish, with white, scariose, entire margins, slightly keeled, the lower and outer with 3, inner and upper with 5, pellucid ribs bordered with purplish green, the middle one alone of each glume continued to the apex, the lateral pair of the inner and upper glume very short, much less distinct or even obsolete. *Paleæ* smooth; outer one very deeply concave, rather more helmet- than boat-shaped, gibbous and green at the base, purplish on the sides, with a well-defined, white, membranous border, 5-ribbed, the lateral ribs branching into three from their origin, the central rib produced into a faint keel at its apex, the intermediate pair less strongly marked, all continued to the membranous margin of the valve, but not entering the latter; inner valve obovato-oblong, membranous, a little concave externally, with a single green rib on each side near the minutely spinulose, ciliated, not inflexed edges, but not reaching the emarginate apex. *Stamens* short; *anthers* pale yellow or purplish. *Styles* long, feathery, tapering, simply branched. *Scale* deeply cleft.

2. *B. minor*, L. *Small Quaking-grass*. Spikelets triangular, glumes longer than the lowermost florets, culms leafy above and as well as the branches of the compound many-flowered panicle scabrous, anthers included, ligule elongated acute, root annual. *Sm. E. Fl.* i. p. 133. *Br. Fl.* p. 541. *E. B.* xix. t. 1316. *Bertol. Fl. Ital.* i. p. 561. *Host. Gram. Aust.* ii. 22, t. 28. *Sibth. Fl. Græca*, i. t. 74. *Parn. Br. Grasses*, p. 226, t. 101. (*minime bona*). *B. aspera*, Knapp. *Gram. Brit.* t. 61. *Parn. Gr.* t. 101.

In cultivated fields, amongst corn, &c., also in pasture-ground; very rare. *Fl.* June, July. *Fr.* August. ☉.

E. Med.—Abundant in certain years in the two last fields between Quarr abbey and Fish-houses, always most plentiful when the land is cropped with corn. In 1836, when I first observed it, the quantity was very moderate, but the year following it was abundant, I think amongst oats, and in 1839 came up in profusion both amongst wheat and vetches. In 1840 scarcely a specimen could be found, but in 1842 it was again plentiful, also in 1843, in the right-hand field (from Quarr), then a lay. In 1838, when the land was laid down with clover, the plant almost totally disappeared. Again abundant in 1845. I found it this year (1849)

in the old station betwixt Quarr abbey and Fishbourne, in the left-hand field, sown with oats, though not amongst the crop, but occupying a broad strip of land along the margin of the field lying fallow, growing in considerable abundance with *Anthemis Cotula* and *Gastridium lendigerum*.

Root a small tuft of compressed somewhat downy fibres, annual. *Culms* solitary or several, erect, from 6 to 18 or 20 inches high, round, pale, striated and shining, smooth except a slight roughness only for a short distance beneath the panicle, clothed with leaves nearly to their summits. *Leaves* rather broad, elongato-lanceolate, taper-pointed, erect, of a pale yellowish and rather glaucous tender green, glabrous, rough at the edges and slightly so on the thin sharp keel and numerous close ribs beneath, one side of their lower part spirally embracing the stem as far as the joint, constituting, with the other less-overlapping edge of the leaf, a tight-fitting though otherwise open grooved *sheath*. *Ligule* thin, white, its free portion oblong, more or less irregularly pointed, notched or torn, seldom truncate or obtuse, though often rounded, always longer than in *B. media*, closely embracing the culm. *Panicle* roundish, of several alternate pairs of rough, very slender, spreading branches, dividing into numerous capillary, divaricate, waved and scabrous ramifications, each supporting an ovato-triangular, tremulous and pendant spikelet, of a pale, sometimes purplish, green colour, scarcely above half the size of those in *B. media*. *Glumes* nearly equal, boat-shaped, very obtuse, quite smooth, green, with deep membranous edges tinged with purple, the inferior or *outer* with 3, the superior or *inner* with 5, pellucid ribs, the lateral pair in this last much shorter than the three intermediate nerves and less strongly marked. *Florets* in all the specimens I have examined 5 or 6, not projecting beyond the sides of the triangle of which the extreme width of the calyx is the base, and therefore in this sense shorter than the glumes, though the two lowermost florets protrude considerably above the edges of these last. *Outer palea* very deep, helmet-shaped (or patelliform?), a little scabrous, the base very gibbous, pale green, 3-nerved, expanding into a deep, pellucid and membranous border, the lower part of which is green, with three ribs on each side of unequal length, the two upper and shortest diverging and not continued beyond the coloured portion, or at all connected with the three nearly parallel basal nerves, the centre one of which only approaches the inflexed summit of the valve; *inner palea* deeply concealed in the basal cavity of the outer, broadly ovate or elliptical, flat, white, scabrous and pellucid, somewhat pointed, with a single strong green rib on each side near the inflexed margin. *Anthers* purplish, very short, included or at most just visible occasionally at the margin of the palea, scarcely protruded when in flower as in *B. media*. *Germen* roundish or slightly turbinate, gibbous on one side. *Styles* long, slender, subapproximate, nearly simple, often a little protruded. The stamens appear to me, from repeated examination, to be either imperfect or wholly wanting in the majority of the *lowermost florets* of each spikelet, as well as the styles.

A still more elegant grass than the preceding, from which it is easily distinguishable on a slight inspection by the paler herbage, denser panicle and long pointed ligule. In size this species is not inferior to the last, and the trivial name of *aspera*, proposed by Knapp, would have been more suitable than its present long-established, but at first view inappropriate, one of *minor*, had not the latter been given it in reference to a far larger plant, the *B. maxima*, L., between which and itself our commoner species (*B. media*) holds a middle rank.

Till of late years *B. minor* has been regarded as one of our rarest British grasses, and two or three spots in the extreme western part of England were for a long time the only recorded localities, most of the specimens then existing in herbaria having been supplied from Penzance or from Jersey. It is now ascertained to be much more widely distributed with us, though apparently limited to the counties S. of London. Stations have been discovered for it in Devon, Dorset, Somerset and Hants, and nowhere perhaps does it occur in greater abundance and luxuriance than in cornfields at Marshwood, near Southampton. It has not yet been noticed in Ireland, though quite a western plant: its range to the northward in this country may be fixed at about 51° 20', or the parallel of Bath, beyond

which it has not been seen wild, and I apprehend the station for it in this island to be its farthest known limit to the eastward in Britain. At Poole, in Dorsetshire, as Dr. Bell-Salter remarks, this is not, as here, a corn-plant, but grows in the less frequented streets, between the stones of the pavement.

The plate of this species in 'Flora Græca' exhibits the branches of the panicle curving downwards, and but little waved or flexuose.

XXV. FESTUCA, Linn. Fescue-grass.

"Panicle lax or coarctate. Spikelets many-flowered, more or less laterally compressed, without a bractea on the base. Glumes 2, unequal, membranaceous, usually keeled, much shorter than the spikelet. Glumellas 2, lanceolate; outer rounded on the back, acuminate or awned at or close to the summit, the lateral nerves slightly converging and disappearing below the summit; inner minutely ciliated at the ribs. Styles terminal. Caryopsis glabrous, free."—Br. Fl.

* Panicle close or contracted, unilateral. Spikelets linear, pointing upwards, with very long awns. Lower glume much smaller than the upper or nearly obsolete. Root annual or biennial.

Vulpia, Gmel. Mygalurus, Link.

1. *F. bromoides*, L. Barren Fescue-grass. "Panicle secund, glumes very unequal, the upper one as long as the lowermost contiguous floret, florets not ciliated scabrous towards the summit.— α . Flowering panicle erect-patent, culm above leafless."—Br. Fl. p. 543. E. B. t. 1411.

β . "Panicle drooping at the end, culm sheathed and leafy to near the panicle."—Br. Fl. 543. *F. Myurus*, Sm. (non L.). *Host. Gram. Aust.* ii. 66, t. 93. *F. Pseudo-Myurus*, Koch, *confer. Godr. Fl. de Lorraine*, iii. p. 177. (*Vulpia Pseudo-Myurus*).

On wall-tops and dry waste ground, but not commonly. Fl. June. ☉ or ♂ ?
E. Med.—On the Dover, Ryde. Wall-top in the Spencer road, Ryde.

β . In similar situations with α , but very rarely. On the garden-wall at Woolverton, by Shorwell, but sparingly, 1839. Wall of Thorley churchyard, in some plenty, 1841.

"Culms 6—12 inches high. Leaves linear, setaceous."—Br. Fl.

β . Much resembles α , but taller, with a much longer closer panicle, a little drooping or rather nodding at the summit, the stem clothed with leaves to the base of the panicle, not naked above as in that. Root a tuft of capillary fibres. Culms numerous, erect, very slender, smooth, shining and angular, more or less geniculate at the lower joints, pale or purplish, 6—12 inches or even occasionally 2 feet in height. Leaves narrow-linear, at first plane, but soon becoming involute and withered, appearing in that condition setaceous. Ligule very short and abrupt. Sheaths loose, smooth and striated, as long as or longer than the leaves, clothing the stem to the foot of the panicle, and often concealing entirely some of the lowermost florets. Panicle close and spicate, erect or slightly drooping, 3 or 4 inches to a foot long, slender and feathery, slightly branched in the lower part, of many upright, narrow, unilateral florets, alternate on the rough-edged much-compressed rachis, the lower ones more or less stalked, the higher nearly sessile. Glumes very unequal, smooth, the larger linear-lanceolate, green and 3-ribbed at the base, nerveless and membranaceous above; outer one much smaller, often almost wanting, single-ribbed, very acute. Florets 4—6, linear, longer than the glumes, the lowermost floret sessile, the rest on short pedicels. Palea lanceolate, acute; outer and larger obscurely 5-ribbed, rough with minute points at the back,

and ending in a rough awn more than twice its own length; *inner* and smaller plain, membranous, with two almost marginal green or brownish ribs, its summit bifid and ciliate at the edges. *Stamens* 3, but often, as in all my specimens, the florets are monandrous. *Stigmas* white, feathery.

2. *F. uniglumis*, Soland. *Single-glumed Fescue-grass*. "Panicle a simple erect 2-ranked subsecund raceme, lower glume very minute, florets not ciliated."—*Br. Fl.* p. 543. *E. B.* t. 1430. *Host. Gram. Aust.* iv. 37, t. 64 (valde dubia).

β. Glumes 3-flowered, flowers monandrous.

On the sandy shores of the sea, or on dry barren ground adjacent to it. *Fl.* May, June. ☉.

E. Med.—St. Helens, *Wm. Borrer, Esq.*, in litt., and where I find it in the loose sand in the greatest abundance, 1839.

β. On the Dover, Ryde, 1839.

Root with copious long capillary fibres. *Culms* several, spreading, geniculate near the base, usually 6 or 8 inches high, smooth, clothed almost entirely with the sheaths of the leaves. *Leaves* subulate, involute, rigid and much shorter than the spikes. *Ligule* extremely short, membranous, torn. *Spikes* solitary, erect, about 2 inches long, of numerous unilateral, 2-ranked, narrow spikelets, on shortish, dilated, simple or sometimes branched stalks, all close-pressed and pointing upwards. *Calyx* 4—8 flowered, one of its glumes either very short as in β. or reduced to a minute pointed or bifid scale; I have never seen it wholly wanting; *larger glume* linear, with a long rough awn. *Florets* very narrow, in my 4-flowered specimens one sessile and opposite the larger glume, the three others pedicellate, the uppermost abortive. *Outer palea* with an awn greatly longer than itself, often slightly tinged with purple, 3-ribbed; *inner* one shorter, with two lateral green ribs, acute, fringed and deeply trifid at the point. *Anthers* yellow. *Styles* feathery. *Seed* linear, triquetrous, with a deep groove in front, the dorsal angle acute, horny and purplish, firmly encased by both the paleæ, glabrous.

In β. the suppression of one of the glumes is seldom total, but both are obviously present, the smaller one bearing a very variable proportion to the larger, in some spikelets very apparent, in others on the same spike almost reduced to a point. The florets are uniformly monandrous, which according to Smith has been observed in *F. bromoides* by Schrader. One, or at most two, of the flowers only bear a solitary stamen; the rest are abortive. I am strongly inclined to believe our present species to be simply a form of *F. bromoides*.

** Panicle loose or somewhat contracted, more or less unilateral. Spikelets lanceolate. Florets shorter than their awns or awnless. Root perennial.

Festuca, *Auct.*

3. *F. ovina*, L. *Sheep's Fescue-grass*. "Panicle subsecund subcoarctate, spikelets oblong of about 4—7 florets with short awns, leaves flat or involute setaceous, ligule 2-lobed.—α. Culms short somewhat 4-angled and scabrous-pubescent below the small panicle, leaves involute-setaceous, root fibrous tufted."—*Br. Fl.* p. 543. *E. B.* t. 585. *Host. Gram. Aust.* ii. 60, t. 84.

β. *duriuscula*. "Culms taller many-angled and somewhat glabrous below the broader panicle, leaves of the culm often flat but afterwards usually involute, root tufted or slightly creeping."—*Br. Fl.* p. 544. *F. duriuscula*, L., *E. B.* t. 470. *Host. Gram. Aust.* ii. 59, t. 83.

γ. *rubra*. "Culms usually tall many-angled and glabrous below the often broadish panicle, leaves of the culm flat at length sometimes involute, root creeping, the scions ending in erect shoots with distichous leaves."—*Br. Fl.* p. 544. *F.*

rubra, L., *E. B.* t. 2056. *Host. Gram. Aust.* ii. 59, t. 82. An *F. hirsuta*, *Fl. Dan.* t. 1627.

In dry, elevated, open pastures. *Fl.* June, July. 24.

β. Common in dry pastures and on the downs.

γ. In loose sand by the sea-shore, and in sandy pastures. On the Dover, below St. Helens, and on the spit at Norton, by Yarmouth, frequent.

*** *Panicle branched, widely spreading. Spikelets ovate or lanceolate. Florets awnless. Root perennial.*

Schedonorus, *P. de Beauv.*

4. *F. arundinacea*, Schreb.? *Tall Fescue-grass.* "Panicle diffuse patent much-branched, branches divaricated after flowering mostly in pairs each with 2 or more (usually numerous) spikelets, spikelets 5—6 flowered, outer glumella 5-ribbed with a very short or obsolete awn, leaves linear-lanceolate."—*Br. Fl.* p. 546. *F. elatior.* *E. B.* t. 1593. *F. littorea*, *Wahlenb. Fl. Succ.* ed. 1, i. p. 65? *Bromus littoreus*, *Host. Gram. Aust.* i. 7, t. 8. *Bucetum*, *Parn. Gr. tt.* 46, 47.

On the moist sandy sea-beach, and wet banks along the shore. *Fl.* June, July. 24.

E. Med.—Upper end of Sandown bay, near the Culvers. Abundant on the wet slipped land under the cliffs at the mouth of Luccombe chine, on the Shanklin side. Frequent under the shore W. of Ryde. [Near the shore at Niton, *A. G. More, Esq., Edrs.*]

W. Med.—Plentiful along the shore on either side of Yarmouth.

Of this tall and stout grass Mr. Hewett C. Watson, who had also remarked it at Luccombe, writes, March, 1842:—"There is a large *Festuca* by the shore at the entrance to Luccombe chine which has puzzled me a good deal. A root now in my garden, I believe to have been brought from that spot, produces leaves near a yard long, and a culm 5 feet high, with very numerous spikelets, much more ovate than those of *F. pratensis*, and with the glumes and paleæ more acute and slightly awned. I fancy this to be the *F. arundinacea* of continental botanists. I have seen the same plant at Exmouth and Plymouth." In a subsequent letter Mr. Watson remarks:—"As to the *Festuca arundinacea*, you may be correct in terming it a form of *F. pratensis* (which I did then, and still consider the *F. arundinacea* of authors to be), but it is a very remarkable one, and if a form of *F. pratensis*, Huds., it is certainly an identical species with *F. loliacea*, from which it greatly differs. Having seen almost every link from ordinary *F. loliacea* to *F. pratensis* in its highly developed form, I am quite satisfied of their unity as a species, but whether *F. elatior* of Linnaeus ought to be joined with them I know not. It seems indeed a 'lumping' to join these five:—

F. loliacea, L.

F. pratensis, Huds.

F. elatior, L.

F. arundinacea, Schreb.

F. arundinacea, *Bot. Gall.* (not Schreb.)

I should unite the 1st and 2nd,—the 3rd and 4th. The 5th, not the 4th, I take to be the Isle-of-Wight shore *Festuca*."

5. *F. pratensis*, Huds. *Meadow Fescue-grass.* "Panicle close never divaricated, branches in pairs, one bearing a single spikelet, the other a solitary or several spikelets sometimes wanting, spikelets 5—10 flowered, outer glumella 5-ribbed with a very short or obsolete awn, leaves linear-lanceolate.—α. Some or all of the branches of the panicle in pairs, one usually with several spike-

lets."—*Br. Fl.* p. 545. *E. B.* t. 1592. *F. elatior*, *Host. Gram. Aust.* 57, t. 79?

β. loliacea. "Branches of the panicle solitary reduced to a single spikelet which is sessile or shortly stalked below."—*Br. Fl.* *F. loliacea*, *Sm.*, *E. B.* t. 1821.

In meadows and pastures. *Fl.* June, July. 24.

β. In marshy meadows and pastures. Meadow by the stream-side a little below Calbourne mill. Whitwell. Meadows at Easton, by Freshwater gate, plentifully. In a marshy meadow called Pan moor, just out of Newport towards Shide. By the side of the Medina between Newport and Shide, *Mr. Snooke*. In Dark lane, Ryde, amongst vetches, 1843, *Mr. Wm. Jolliffe*!!

XXVI. *BROMUS*, *Linn.* Brome-grass.

"*Panicle* lax or coarctate. *Spikelets* many-flowered, more or less laterally compressed. *Glumes* 2, unequal, usually keeled, equal to or shorter than the lowermost florets. *Glumellas* 2, herbaceous; *outer* one rounded on the back, two of the lateral nerves usually uniting with the middle one and forming an awn below the bifid extremity; *inner* one conspicuously ciliated on the ribs. *Styles* from below the summit of the *caryopsis*, which is villous at the apex and 'adheres to the upper *glumellas*.'"—*Br. Fl.*

1. *B. giganteus*, *L.* *Tall Brome-grass*. "Panicle branched drooping towards one side, spikelets lanceolate 3—6 flowered awned, outer glumella 5-nerved shorter than its awn, leaves linear-lanceolate ribbed."—*Br. Fl.* p. 546. *Festuca*, *Vill.* *E. B.* t. 1820. *Host. Gram. Aust.* i. p. 6, t. 6.

β. Spikelets fewer and more remote. *B. triflorus*, *L.*: *E. B.* xxvii. t. 1918. *Fl. Dan.* iii. t. 440, 1630.

In moist shady woods, copses and hedgerows; not uncommon. *Fl.* July, August. 24.

E. Med.—In Quarr copse, Shore copse, and elsewhere about Ryde. Whitefield wood, and near Yarbridge. Knighton East copse, by Newchurch. Shanklin chine. Copse near the Park farm, Appuldurcombe, 1844.

W. Med.—[Lane at Brighstone, *A. G. More, Esq.*, Edrs.]

β. Found occasionally in various places.

Root perennial, a tuft of long, pale, nearly simple, downy fibres. *Culms* numerous, from about 2 to 4 or 5 feet high, erect, stout, smooth, shining and glabrous, with tumid purplish joints, naked at the summit. *Leaves* bright green, somewhat erect, those on the middle of the stem 12 or 15 inches long and 7 to 9 lines wide, those on the lower part narrower; flat, linear-lanceolate, finely striate, taper-pointed and very acute, beneath shining, with a prominent sharply keeled midrib and several less conspicuous lateral ones, finely serrulato-scarious on the margins, roughish chiefly towards the point on both sides, excepting at the lower part of the leaf underneath, which is smooth and shining, a little obliquely clasping the stem by a pair of falcate purplish auricles, with acute mostly deflexed points; about the middle or rather nearer the point of each leaf there is a slight contraction like the impression a cord or other narrow ligature would make on a bundle of them loosely tied together, an appearance I have not found noticed by any author.* *Sheaths* close, striated and glabrous, the uppermost longer, the rest shorter than their leaves, a little open before at their tops. *Ligule* extremely short, broad and truncate. *Panicle* large, a foot or more in length, subsecund, drooping or

* This constriction is observable also in *B. asper* and in the common Reed (*Phragmites communis*).

nodding at the top, of several pairs of rather unequal, alternate, distant, long-spreading, rough, 3-edged branches, compound and drooping at their extremities, springing from the flattened side of the semiterete rachis, which is scabrous at the angles, becoming more so between each successive pair of branches, which last diminish in length as they ascend, and at last are reduced to alternate simple pedicels, bearing a solitary spikelet. *Spikelets* usually 5—7 flowered, in the var. β . only 3-flowered, slender and lanceolate, compressed, closely applied in general to the flat face of the very scabrous branches, about $\frac{1}{2}$ an inch in length without the awns. *Glumes* very unequal and acutely acuminate, lanceolate, with white, scariose, mostly torn margins, smooth and glabrous; lower and outer glume single-ribbed, with a green back; inner and upper much longer, wider, 3-ribbed, the lateral ribs much shorter than the middle one. *Palea* nearly equal in length.

A less tall but more robust grass than the following, and intermediate between *Bromus* and *Festuca*, making an approach also to *Brachypodium*, but referred with the greatest propriety to the first of these genera, agreeing as it does with that, and especially *B. asper*, in habit and general appearance. It is easily distinguished from that species by the nearly erect or slightly nodding panicle, leaning rather to one side, not drooping in all directions as in that of *B. asper*; by the much longer almost feathery awns, which are variously waved and contorted, not straight and bristly. The spikelets, too, are much smaller, shorter, and of a brighter green, as is the whole plant, which is, moreover, remarkably smooth, excepting the branches of the panicle, but the roughness of these is much less than in *B. asper*. The joints of the culm are stained with dark purple, as are also the very remarkably amplexicaul bases of the much broader stem-leaves and the very short entire stipule, all of which in *B. asper* are uncoloured. The stigmas in the present species are nearly simple, in that densely feathery. The pale appearance of the midrib of the leaf cannot be depended upon as constant; the absence of the long hairs so conspicuous on the sheaths is an all-sufficient distinction. From *Brachypodium sylvaticum* the stalked florets will make its discrimination easy. The fringe at the edges of the inner valve of the corolla is certainly trifling compared with that in others of the genus; still the hairs are bristly, differing in size and number only from such as are found in true species of *Bromus*.

2. *B. asper*, L. *Hairy Wood Brome-grass*. "Panicle slightly branched drooping, spikelets linear-lanceolate, florets remote sub-cylindrical hairy about twice as long as the straight awn diverging in flower afterwards erect, outer glumella 5—7 ribbed, that of the lowermost floret twice as long as the smaller glume, sheaths with hairs pointing downwards, leaves uniform the lower ones hairy."—*Br. Fl.* p. 547. *E. B.* t. 1172. *Fl. Dan.* viii. t. 1382. *Host. Gram. Aust.* i. 6, t. 7.

In moist woods and thickets; abundantly. *Fl.* July, August. 24.

E. Med.—In Quarr copse, Apley wood, St. John's wood, and most other woods about Ryde.

W. Med.—Abundant in woods about Yarmouth.

The tallest though not the stoutest of our Brome-grasses, often upwards of 6 feet high, and very conspicuous from its large panicle elegantly drooping in all directions.

The margin of the inner or larger calyx-glume is sometimes perfectly glabrous, as I find it in my specimens. Smith's description of this grass is excellent.

3. *B. sterilis*, L. *Barren Brome-grass*. "Panicle drooping slightly branched, spikelets linear-lanceolate, florets remote sub-cylindrical scabrous shorter than the straight awn diverging during and after flowering, outer glumella with 7 distinct

equidistant ribs, leaves and sheaths pubescent."—*Br. Fl.* p. 547. *E. B.* t. 1030. *Host. Gram. Aust.* i. 13, t. 16.

In waste places, by waysides and the borders of fields: plentifully. *Fl.* June. ☉.

4. *B. erectus*, Huds. *Upright Perennial Brome-grass*. "Panicle simple erect, spikelets linear-lanceolate, florets subcylindrical remote about twice as long as the straight awn diverging in flower afterwards erect, outer glumella obscurely 7-nerved, that of the lowermost floret one-third longer than the smaller glume, sheaths somewhat hairy the hairs pointing upwards, root-leaves very narrow ciliated."—*Br. Fl.* p. 546. *E. B.* t. 471. *Bertol. Fl. Ital.* i. (optim. et operosa descript.) *B. agrestis*, *All.*: *Host. Gram. Aust.* i. p. 9, t. 10 (bona).

In dry open pastures and by roadsides; rare. *Fl.* June, July. 24.

E. Med.—In great plenty on each side of the path across the fields from Luccombe to Bonchurch, along the steep ascent by the edge of the precipice overlooking Rose cliff and the entrance to East end. In vast profusion on the sloping sides of the down above the road between Luccombe and Bonchurch, here and there covering the ground to the exclusion of every other grass, at an elevation of perhaps 300 feet above the sea, 1844. Luccombe, *D. Turner, Esq.*, B. T. W.

A handsome grass. *Root* perennial, thick and somewhat creeping, with copious long, branching, slender fibres. *Culms* several, erect, round, smooth, striated, about 2 feet or more high. *Leaves* numerous, the radical ones and those of the barren shoots remarkably narrow or linear, more or less fringed on their edges and backs with soft, white, spreading hairs; those on the stem broader and shorter, with long, hairy, ribbed *sheaths*. *Ligule* extremely short, truncate and torn. *Panicle* of several distant sets of half-whorled, simple or slightly compound, roughish, nearly erect branches; most resembling that of *B. diandrus*, but less spreading. *Spikelets* linear-lanceolate, much compressed, from 4- to 6- or 8-flowered (sometimes 12-flowered, *Bertol.*), mostly 5- in my specimens; *florets* remote, linear, greenish or purplish, smooth, the uppermost often imperfect. *Glumes* more or less unequal,* linear-acute, membranous; *inner*, upper and larger one 3-ribbed; *outer* and smaller mostly single-nerved, and terminating in a short awn; both glabrous and devoid of all roughness, except in a slight degree at the back near their joints, their edges often much jagged or torn. *Palea* linear-lanceolate, unequal, very acute; the *outer* and larger 5-ribbed (the two intermediate ribs shorter and less distinct), ending in a straight awn scarcely half its own length, arising from a little below its slightly bifid apex, and which is roughish chiefly on its lower half, where the keel of the valve itself is slightly scabrous; *inner* and upper palea flat, diaphanous, with a green rough marginal rib on each side, and sharply inflexed edges. *Stamens* 3; *anthers* large, dark red. *Stigmas* densely plumose. *Ovary* bristly on its upper part. *Seed* oblong, compressed, strongly grooved down the middle, only slightly cohering to the paleæ, and falling out from the florets when ripe, at which period the panicle is still erect.

5. *B. mollis*, L. *Downy Brome-grass*. "Panicle close ovate erect in fruit slightly branched, simple peduncles shorter than the crowded ovate somewhat compressed pubescent spikelets, flowers closely imbricated, awn straight about as long as the florets, sheaths of the leaves pubescent or hairy." *H. Watson in Hook.*

* The proportion the glumes bear to each other in this species is very variable; sometimes they are nearly equal, and both distinctly 3-ribbed.

Lond. Journ. of Bot. i. p. 84." — *Br. Fl.* p. 549. *E. B.* t. 1078.
Host. Gram. Aust. i. 16, t. 19. *Serrafalcus, Parl.*

An abundant species in meadows, pastures, by roadsides, in cornfields and waste places. *Fl.* June. ☉ or ♂.

6. *B. racemosus*, L. *Smooth Brome-grass*. "Panicke elongated erect in fruit, peduncles nearly simple about equal to the ovate subcompressed glabrous spikelets, florets imbricated compressed, awn straight about as long as the glume, sheaths of the leaves slightly hairy." *H. Watson in Hook. Lond. Journ. of Bot.* i. p. 84." — *Br. Fl.* p. 549. *E. B.* t. 1079.

β. *intermedia*. Culms pubescent.

In similar places with *B. mollis*, but of less frequent occurrence. *Fl.* June. ☉ or ♂.

E. Med.—Not rare about Ryde, as in fields between it and Binstead. Abundant in meadows on Sandown level. Fields near Asheys.

W. Med.—Freshwater, *D. Turner, Esq.*, B. T. W.

β. Meadow in Sandown level, 1839.

I can hardly believe this to be more than a glabrous state of *B. mollis*.

7. *B. commutatus*, Schrad. *Tumid Field Brome-grass*. "Panicke loose slightly drooping in fruit, lower peduncles often elongated and branched, simple peduncles equalling or exceeding in length the oblong-lanceolate glabrous spikelets, florets loosely imbricated, when in fruit the glumellas only slightly overlapping at their edges near the base, awn straight about as long as the floret, leaves and their sheaths hairy." *H. Watson in Hook. Lond. Journ.* i. p. 84." — *Br. Fl.* p. 549. Vide *Dietrich. Berlin. Fl.* i. *B. arvensis*, *Parnell, Scot. Gr.* p. 114, t. 49. *B. multiflorus*, *Host. Gram. Aust.* i. 10, t. 11? (*B. patulus*, *M. et K. ex visdem auctoribus in Röhl. Deutschl. Fl.* i. p. 685). *Serrafalcus, Bab.* *B. pratensis*, *E. B.* t. 920 (small specimen).

Cornfields and by waysides, in pastures, &c. *Fl.* June—October. ☉.

E. Med.—By the roadside between Ryde and Brading, before coming to the turning to St. Helens, frequent, 1839. By the pathside between Sandown and Shanklin. In a cornfield near Shanklin towards Luccombe. Field near Coppid hall. Cornfield near St. Catherine's point, sparingly.

Root of several slender fibres. *Culms* 2—3 feet high, round, striated, quite smooth, or with a slight roughness visible only under a lens. *Leaves* linear, flat and tapering, very downy on their upper surface with long, white, nearly erect hairs, shorter and less copious on the under side: those leaves that are nearest the root, and which soon wither and dry up, are narrower than such as are higher on the stem. *Sheaths* long, close, ribbed, the uppermost one nearly glabrous, though its leaf be downy, the rest clothed with deflexed pubescence. *Ligule* very short, truncate and jagged. *Panicke* from 4 to 6 or 8 inches in length, of many long, slender, half-whorled, simple or compound branches, rough and angular for some distance beneath the spikelets, smooth towards their insertion on the main stem, at first slightly secund and erecto-patent, afterwards drooping and quite unilateral, one or two of the lower branches excepted, which depend occasionally in opposite directions. *Spikelets* lanceolate, compressed, very acute, and finely tapering at first, but as the flowers advance the tips of the extreme florets expand a little by the swelling of the ripening seeds, destroying the distinctness of this character: the spikelets are usually greenish, variously shaded with purple and russet tints, with strongly marked dark green or purplish ribs; not unfrequently they are altogether bright green, or coloured on one side only. *Calyx*

with 8 or 10 glabrous florets (in the specimens before me they are perfectly smooth under a good lens). *Glumes* unequal, *outer* or smaller with 2, *inner* and larger with 4 ribs on each side, acute, with a rough keel and white membranous edges. *Outer palea* ovate, obtuse, deeply notched at the apex, with 4 strong green ribs on each side besides the central one; a pair of these ribs run close together near the inflexed membranous margins of the valve, which slopes off suddenly at an angle to the apex, below which is inserted the rough *awn*, about equal in length to the valve, purplish in its lower, pale in its upper, half; *inner palea* emarginate, delicately membranous, edged with green and pectinated with stout, distant, bristly cilia pointing upwards. *Anthers* dark purple. *Ovarium* oblong, much compressed. *Styles* extremely short; *stigmas* feathery, deflexed.

I find a grass very similar, if not the same, on hedgebanks near Carpenters, and elsewhere about Ryde, as well as amongst corn, which I regard merely as a larger more diffuse form of *B. racemosus*, the spikelets drooping when in seed from the length and weakness of the peduncles. Whoever will be at the trouble of comparing the discordant accounts given by authors of *B. arvensis* will perhaps concur with myself in opinion that *B. arvensis*, *B. racemosus*, *B. secalinus*, *B. velutin*, not to mention the present still more obscure and doubtful species, *B. commutatus*, *B. multiflorus*, &c., are in all probability so many forms of *B. mollis*.

The *B. arvensis* of Fl. Cestrica is only this species, as I learn by authentic specimens from West Chester County in my possession.

8. *B. secalinus*, L. *Rye Brome-grass*. "Panicle loose drooping in fruit, lower peduncles slightly branched, simple peduncles about equalling the oblong compressed glabrous spikelets, florets at first imbricated afterwards distinct cylindrical, the incurved edges of the glumellas not overlapping those of the floret above them, awn straight about as long as the floret, leaves hairy but the sheaths nearly glabrous." *Watson in Hook. Lond. Journ. of Bot.* i. p. 85.—*Br. Fl.* p. 548. *Host. Gram. Aust.* i. 10, t. 12.

In cornfields and waste places. *Fl.* June, July. ☉ (or ♂, *Hook.*)

E. Med.—At Whitecombe, near Newport, where it abounded to an injurious degree some years ago, having been introduced, it is supposed, in seed-wheat from Suffolk. Amongst vetches at Playstreet farm, by Ryde, *Mr. W. Jolliffe*, 1841! At Redhill, abundant, *Mr. Wm. Hughes!* On the sea-coast at Ryde, *With.* (7th ed.)

XXVII. AVENA, Linn. Oat.

"Panicle lax. Spikelets laterally compressed, with 2 or more perfect florets and sometimes 1 or more rudimentary neuter one. *Glumes* 2, membranaceous, 3- or many-nerved. *Glumellas* 2, lanceolate, hairy at the base, herbaceous, at length cartilaginous and firmly enclosing the *caryopsis*; outer one with a long twisted geniculate dorsal awn, with two points or bristles at the summit."—*Br. Fl.*

* Smaller glume 5—7 nerved, larger one 5—11 nerved. Outer glumella 6—8 nerved. Spikelets ultimately drooping. Ovary hairy at the top. Annual plants.

1. *A. fatua*, L. *Wild Oat* or *Haver*.* "Panicle erect, spikelets drooping of about 3 scabrous much-awned florets smaller

* *Hafer* in German.

than the glumes with long fulvous hairs at the base, outer glumella bifid at the summit, root fibrous."—*Br. Fl.* p. 551. *E. B.* t. 2221. *Fl. Dan.* t. 1629. *Host. Gram. Aust.* ii. t. 58.

In cornfields and cultivated ground; a frequent and very injurious weed. *Fl.* July, August. ☉.

A tall grass, 3 or 4 feet in height. *Root* small, with downy fibres. *Culms* 1 or more, round, hollow, shining, erect. *Leaves* most numerous below, linear, flat, grayish green, rough, those towards the root often fringed with soft white hairs near the stem, as are likewise their close, striated and long *sheaths*, often filamentous along their edges. *Ligule* short, obtuse, usually much torn and jagged. *Panicle* very large, at first unilateral and crowded, afterwards very diffuse and spreading, its branches long, slender, angular, roughish, simple or slightly compound, bearing numerous large, lanceolate, drooping spikelets on peduncles thickened beneath each. *Glumes* equal, thin and chaffy, very acute, lanceolate, with many strong green ribs running close and parallel, each with a double line of scabrous points throughout its length. *Florets* usually 3, much shorter than the glumes. *Outer palea* much like the glumes, but thicker in texture, with fewer ribs, rough with tubercular prominences, bifid at the point, covered at the back with fine, whitish or tawny, bristle-like hairs; *inner* or superior palea ovato-lanceolate, thin and flat, notched at the point, and having a single green rib along each of its finely ciliated lateral margins; *awns* very long, inserted on the back of each floret about its middle, twisted for about half their length, at which point they are suddenly bent, and then continued straight to the summit. *Anthers* yellowish. *Stigmas* short, simple, feathery. *Germen* seated on and almost concealed amongst a dense tuft of soft white hairs.

Its more valuable congener, the cultivated Oat (*A. sativa*, L.), differs from the present species in its smaller and far less spreading panicle, which continues unilateral to the last; in its smoother less strongly ribbed florets, nearly devoid of all hairiness beneath, one or more of which are abortive and wanting the awn, which is shorter and not geniculate as in that. The florets of *A. sativa* are placed upon a short vertical footstalk immediately under the base in a transverse position, whilst those of *A. fatua* stand laterally or obliquely upon their very short point of insertion, and are all furnished with awns.

2. *A. strigosa*, Schreb. *Bristle-pointed Oat.* "Panicle erect, branches all secund, spikelets of 2 perfect florets each awned as long as the glumes and terminated by 2 long straight bristles."—*Br. Fl.* p. 551. *E. B.* t. 1266. *Host. Gram. Aust.* ii. 41, t. 56.

In cornfields and cultivated ground occasionally, but doubtless introduced. *Fl.* "June, July."—*Br. Fl.* ☉.

E. Med.—Amongst potatoes by St. John's turnpike-gate, Ryde, *Rev. G. E. Smith!!!*

Root yellowish, fibrous. *Culms* several, about 2 feet high, erect, purplish below, rather slender, with long, slightly inflated, ribbed sheaths, that are often a little filamentous towards their summits. *Leaves* like those of the common Oat, flat, roughish above and along their edges with minute prickles pointing forwards. *Ligule* rather short, truncate and torn. *Panicle* oblong, mostly leaning one way, more slender than in the common Oat, the florets linear-lanceolate, on very long, slender, partly compound pedicels. *Glumes* rather unequal, acute, roughish on their keels; *outer* and shorter with 9, *inner* and longer with 7, green ribs. *Florets* 2 (sometimes 4), both perfect, the inner one on a geniculate bearded pedicel, but neither having any basal tuft as in *A. fatua*. *Palea* sprinkled with rough points, 7-ribbed; *outer* one of each floret with a long, twisted, almost straight awn from the middle of the back, and 2 much shorter terminal ones; all rough, slender and purplish; *inner palea* flattish, acute, ciliated with soft hairs, and having a single marginal green rib on each side. *Anthers* yellowish. *Scale* (nectary) with 2 very acute lobes. *Scar* nearly circular, neither transverse nor oblique, the

pedicel of each floret being rounded, not compressed as in *A. sativa*, inserted at the very centre of the base of the paleæ.

The Bristle-pointed Oat is cultivated, with other species of this grain, in various parts of Europe, and very commonly in the Isle of Skye, as I learn from Mr. Borrer. Its occurrence with us is quite fortuitous.

**** Smaller glume 1—3 nerved, larger one 3-nerved. Outer glumella distinctly 5-ribbed. Spikelets erect. Ovary hairy at the top. Ligule acute. Perennial plants.**

3. *A. pratensis*, L. *Meadow Oat-grass*. "Panicle erect simple or slightly compound lax, spikelets erect oblong compressed of 3—6 florets, lower floret scarcely so long as the larger glume, leaves glabrous but more or less scabrous on the surface, root tufted."—*Br. Fl.* p. 552. *E. B.* t. 1204. *Host. Gram. Aust.* ii. 38, t. 51. *Trisetum*, *Parn. Gr.* t. 52.

On dry heaths and pastures; very common in the chalky parts of the island.

E. Med.—On St. Boniface down, and other parts of the Undercliff, abundant.

W. Med.—About Carisbrook.

4. *A. pubescens*, L. *Downy Oat-grass*. "Panicle erect nearly simple, spikelets erect of about 2 or 3 florets scarcely longer than the glumes, lower leaves plane and the sheaths downy, edges smooth."—*Br. Fl.* p. 553. *E. B.* t. 1640. *Host. Gram. Aust.* ii. 37, t. 50. *Trisetum*, *Pers.*; *Parn. Gr.* t. 54.

In dry woods, pastures, and on chalky downs; common. *Fl.* June, July. 24.

Easily known from *A. pratensis*, to which it is most nearly allied, by its flat leaves, downy at the edges. Root downy like the rest of the plant. *Calyx* often 2-flowered, in which case there are usually the rudiments of a third floret, more or less developed, sometimes little more than a pedunculated tuft of white hairs.

***** Smaller glume 1-nerved, larger 3-ribbed. Outer glumella keeled with faint lateral nerves ending in two bristles. Spikelets erect. Ovary glabrous. Ligule short and obtuse. Perennial plants.**

5. *A. flavescens*, L. *Yellow Oat-grass*. "Panicle much branched lax, spikelets of about 3 florets equal in length to the longer of the very unequal glumes, outer glumella with 2 terminal bristles, lower leaves and sheaths hairy."—*Br. Fl.* p. 553. *E. B.* t. 952. *Host. Gram. Aust.* iii. 26, t. 38. *Trisetum*, *Beauv.*; *Parn. Gr.* t. 54.

In dry meadows, pastures and heathy places; very commonly. *Fl.* July. 24.

XXVIII. PHRAGMITES, *Trin.* Reed.

"Panicle loose. Spikelets distichous, with 3—4 many distant perfect florets and a barren one at the base, which are all enveloped in long silky hairs attached to the rachis of the spikelet. Glumes 2, membranaceous, unequal, shorter than the floret, the lower much smaller. Glumellas 2, membranaceous; lower ending in a long subulate awnless point."—*Br. Fl.*

1. *P. communis*, *Trin.* *Common Reed*. "Panicle spreading, spikelets coloured about 5-flowered longer than the glumes, leaves

lanceolate acuminate-cuspidate." — *Br. Fl.* p. 553. *Arundo Phragmites*, *L.*: *E. B.* t. 401. *Host. Gram. Aust.* iv. 23, t. 39.

β. Culms procumbent, 30—40 feet long. Vide Ray, *Syn.* ed. 3^{ta}, *Indic. Plant. Dub.* *Gramen arundinaceum*. 30 pedes longum. *P. communis* b. repens, *Meyer, Chlor. Hanov.* p. 650.

In wet marshy places, moist thickets, sides of pools, rivers and ditches, also on wet slipped land and in salt-marshes; very common. *Fl.* August, September. *Fr.* October. 24.

E. Med.—On the wet slipped land along the shore from Ryde towards the Priory. In Whitefield wood.

W. Med.—Covers the mud-flats on the E. bank of the Yar, a little below Fresh-water mill.

β. Common along the shore at Puckaster cove, trailing to a great length on the flat sands, or hanging from the clay-banks above the beach; also in other parts of the island along the S. coast. In a ditch between Sandown bay and Lower Morton farm I find it with culms of considerable length floating on the surface, and emitting fibres from the joints, 1842. Near the Shanklin extremity of Sandown bay, also rooting at the joints, 1842. At Bembridge, *Dr. Bell-Salter*.

Root extensively creeping. *Culm* erect (or in the singular var. *β.* prostrate and trailing), from about 4 or 6 to 8 and 10 or even 12 feet high, simple or occasionally emitting a few short lateral shoots or branches, straight or slightly geniculate at one or two of the lowermost joints, hard and rigid, hollow, scarcely tapering from the base upwards in this island, rarely much exceeding a swan-quill in thickness, at length woody. *Leaves* varying from narrowly lanceolate or linear-lanceolate, alternate or often partly arranged unilaterally, spreading or more or less erect, firm, glabrous, those about the middle of the stem largest, in full-sized plants 18—20 inches or more in length and 1½ inch wide, pale green and somewhat glaucous, especially beneath, finely ribbed and striated, flat, with one or two marks of constriction across them, gradually acuminate into extremely long, fine and slender, pale points, that are frequently split into fibres to a considerable distance downwards, rather inconspicuously and obtusely keeled in their lower half, elliptically tapering at the base, their margins somewhat uneven and cartilaginous. *Sheaths* imbricating, closely investing the culm, glabrous, finely striated, much shorter than the leaves and concolorous, palish at their base, open behind the greater part of their length, with narrow whitish brown margins. *Ligule* a row of extremely short, close-set, white, erect hairs. *Panicle* terminal, from a few inches to a foot in length, of many alternate, fasciculate, somewhat whorled, compound branches, smooth, angular, subcompressed, at first drooping unilaterally, when in flower diffusely spreading in a pyramidal form, the lower and longer ones a little drooping or recurved, and springing from a scale-like cartilaginous process of the angular rachis, beset with long, white, silky hairs, and of which the superior branches are destitute, having merely a 2-lobed gland-like callosity at base between them and the common axis. *Spikelets* very numerous, imbricated, dark or sometimes brownish purple, linear-lanceolate, pedicellate, nearly ½ an inch in length, 3- or 5- (mostly 3-) flowered, the lowermost floret subsessile and staminate or sometimes perfect and naked at the base, the rest pedicellate and perfect (androgynous), their pedicels compressed and fringed laterally with white silky hairs, that gradually lengthen as the flowering advances, and when in seed spreading in all directions, giving a beautiful plume-like appearance to the panicle. *Glumes* concave, glabrous, very unequal, much shorter than the florets; the inferior and outer elliptic-lanceolate, subaristate-acuminate, with three principal and several often very indistinct ribs, and a slightly rough prominent keel; superior and inner linear-lanceolate, acute, about twice the length of the other, distinctly 3-ribbed, scarcely keeled, the margins involute. *Palea* very unequal; the lower and outer about thrice the length of the inner one, linear-lanceolate, very acutely acuminate, which with the inflexion of its edges causes it to

appear as if awned;* inner and upper valve linear-oblong, flat, diaphanous, with slightly reflexed purplish margins, spinulosely ciliated above and bifid at the apex. *Anthers* pale yellow. *Styles* yellowish.

** *Inflorescence* spicate.

† *Solitary flowers or spikelets sessile, upon a common stalk or rachis.*

a. *Spike simple. Flowers or spikelets either distichous or inserted on all sides of the rachis.*

XXIX. HORDEUM, Linn. Barley-grass.

"*Spikelets* in threes from the same joint of the *rachis*, 1—2 usually neuter or barren: fertile ones with a perfect floret and a rudimentary neuter one. *Glumes* 2, collateral, awned. *Glumellas* 2."—*Br. Fl.*

1. *H. murinum*, L. *Mouse Barley. Wall Barley-grass. Way Bennet.* Spike obovato-oblong subcuneate, culms leafy at top, "glumes of the middle spikelet linear-lanceolate ciliated, of the lateral ones setaceous-scabrous, outer glumellas of all the spikelets shorter than their awns."—*Br. Fl.* p. 555. *E. B.* t. 1971. *Host. Gram. Aust.* i. 25, t. 32.

By waysides, and in waste places under walls about towns and villages; very frequent. *Fl.* May—July. ☉.

Root annual, caespitose, fibrous, the fibres branched, flexuose, slender. *Culms* numerous, forming dense tufts, seldom much above a foot high, lax, spreading or decumbent below, then ascending, mostly geniculate at the joints, terete, striated, glabrous and shining, clothed to the very summit or nearly so with leaves, never, as in the next, naked any great extent below the spike, simple or slightly branched at bottom. *Leaves* few (about 5 or 6), pale dull green and slightly glaucous, very broadly linear, very acute, lax and wavy, the uppermost one shorter than its sheath, the rest longer; all clasping the culm by pale, falcate, very acuminate auricles, of which the points cross one another behind; downy on both sides with fine erect pubescence, slightly keeled beneath, their margins minutely scabrous. *Sheaths* loose or somewhat inflated, striated, smooth and glabrous (even the lowermost in my specimens), or with a very slight downiness on them at farthest, the uppermost sheath very commonly spathaceous, or half-embracing the base of the flowering spike; all divided throughout. *Ligule* excessively short and truncate, erose. *Spike* densely distichous, compressed, pale yellowish green, from about 2 to 3½ inches long, obovato-oblong or somewhat wedge-shaped in circumscription from the gradual spreading out of the awns upwards to its very obtuse termination. *Spikelets* erecto-patent, 3-flowered. *Rachis* broad and flat, 2-edged, the margins beset with spinules pointing upwards. *Central floret* sessile, perfect, the two lateral florets shortly stipitate, containing staminate florets only. *Glumes* very narrow, those of the intermediate floret linear-lanceolate, equal in size, scabrous at the back and margins, 2—3 ribbed, ciliated on the edges with long white hairs directed upwards, acuminate into a bristly awn about equal to the longer one of the lateral florets; glumes of the lateral florets very similar to those of the central one, but narrower and a little unequal, the outer one setaceous and merely scabrous, the inner subulate, fringed on the outer side and shorter than its fellow, which is about to the central floret-glumes in length, those of all the florets green at the back, with pale cartilaginous edges. *Paleæ* 2; the inferior and outer one of all the florets ovato-lanceolate, concave, glabrous or a little hairy, 5-ribbed;

* The outer valve of the uppermost floret in all or most of the spikelets I have examined has a sudden flexure about the middle, and which is perhaps a constant character.

superior and inner plane with inflexed edges, and a pair of green ribs down the centre, the apex slightly notched or bifid and spinulose, or sometimes entire. *Awns* of the lateral florets about twice, of the central florets about three times, as long as the palea: at the base of the inner palea of each floret, but springing from the stipes or pedicel, is a bristle or awn, supposed to be an abortive floret, about half the length of the valve. *Stamens* short, hence but little exerted; *anthers* small and short, elliptical, pale yellowish green. *Scale* cleft to the base into two linear-lanceolate, acute and fringed lobes, that are gibbous below. *Germen* villous at top. *Styles* distant, feathery and recurved. *Seed* elliptical-oblong, grayish, with a groove in front, and sometimes 3-ribbed behind, somewhat convex, firmly adhering to both valves.

2. *H. pratense*, Huds. *Meadow Barley-grass*. *Squirrel-tail-grass*. Spikes elongate or lanceolato-oblong, culms leafless at top, sheaths close, "all the glumes setaceous and scabrous (not ciliated), outer glumella of the middle spikelets about as long as its awn, of the lateral ones with a short awn." — *Br. Fl.* p. 555. *E. B. t.* 409. *H. secalinum*, Schreb.: *Host. Gram. Aust. i.* 26, t. 33.

In rather moist meadows and pastures, also in salt-marshes, with the next species; abundant. *Fl.* June, July. ☉ or ♀?

E. Med.—Monkton meadows, Ryde, 1844. About Ryde it constitutes a too large portion of the hay-crops.

W. Med.—Most abundant in meadows about Yarmouth, and between Yarmouth and Thorley. Marsh-meadows at Easton, Freshwater gate. Cowes.

Root small, fibrous and slightly creeping, "becoming bulbous in barren ground occasionally overflowed" (*Sm.*) *Culms* few, slightly ascending at the base, afterwards erect, from about 18 inches to 2½ feet in height, very slender, smooth, terete, naked for several inches below the spike. *Leaves* few, bright green, not glaucous, flat, the superior ones very distant, the topmost leaf shorter than its sheath, the rest as long as or longer, linear, flat, acute, roughish and a little hairy on their upper side mostly, the margins minutely scabrous, folded, but not, as in the last, auricled at their base. *Sheaths* long, close, striated, glabrous, excepting those of the very lowest and withered leaves, which are very downy, ribbed and whitish. *Ligule* extremely small, short and truncate. *Spike* distichous, elongate or lanceolato-oblong, from about 1½ inch to 3 inches in length, compressed. *Spikelets* erecto-patent, smaller than in the last, and with much shorter awns. *Florets* similarly constituted and arranged as in the last and following species on the compressed 2-edged rachis, whose margins are closely beset with minute spinules pointing upwards. *Calyx-glumes* of all the three florets scabrous-serrate, setaceous-subulate, equal in breadth, but those of the central floret shorter than the glumes of the lateral ones. *Palea* lanceolate, much shorter than the glumes; outer one of each floret acuminate into a long awn, of which that of its central floret is much longer than its glumes, of the lateral florets considerably shorter than their glumes; the outer palea of the central floret is glabrous, of the lateral slightly hairy, towards the summit, that of the former ovato-lanceolate, very aristato-acuminate, 5-ribbed, the lateral pair of ribs less distinct and near the inflexed margin; inner and superior valve lanceolate, very acute but not aristate, having a pair of strong green ribs bounding a central groove, in which lies an awn or bristle of about half the length of the valve, springing at its very lowest point, but not attached to its base, properly speaking perhaps, but rather planted on the pedicel of the floret. *Lateral florets* mostly staminiferous, the fertile organs imperfect or wanting. *Anthers* linear-oblong, scarcely cloven, buff-yellow, much exerted on their slender lax filaments. *Scale* (nectary, *Sm.*) cleft to the base into two acute, lanceolate, somewhat fringed lobes. *Germen* very downy at top, oblong. *Styles* distant, much-branched, beautifully plumose and recurved.

3. *H. maritimum*, With. *Sea-side Barley-grass*. Spikes ovato-oblong, calyx-glumes scabrous, the interior one of the lateral florets semilanceolate, the rest subulate, culms decumbent leafy above, sheaths loose. *E. B. t.* 1205. *Br. Fl. p.* 555. *Host. Gram. Aust. i.* 27, t. 34.

In salt-marshes and pastures near the sea; not uncommon. *Fl.* June, July. ☉.

E. Med.—In the marsh-meadows by Springfield, near Ryde. [Brading marshes and S. side of Brading harbour, *A. G. More, Esq., Edrs.*]

W. Med.—On the embankment by Yarmouth mill, and at Norton. Abundant in salt-marshes at Newtown.

Root a tuft of whitish, flattened, wrinkled and downy fibres. *Culms* very numerous, slender, leafy almost to the summit, rigid, quite smooth, about 6 or 8 inches high, decumbent by their geniculate and tumid joints, and spreading in all directions in the form of dense roundish tufts, the terminal portion above the superior articulation for the most part only erect or ascending. *Leaves* short, plane, linear- or sublinear-lanceolate (the uppermost stem-leaf often almost triangular), roughish at the edges, more or less pubescent, especially beneath, strongly ribbed above, pale glaucous-green, with smooth-ribbed, greenish or purplish, slightly tumid sheaths, divided spirally to the bottom. *Ligule* extremely short, truncate. *Spikes* broader than in *H. pratense*, ovato-oblong, about $1\frac{1}{2}$ inch or 2 inches in length, pale glaucous-green, the awns often purplish. *Florets* 3, the intermediate one perfect, sessile, the two lateral stipitate, imperfect. *Glumes* subulate, nearly if not quite as scabrous as in *H. pratense*, white at the back, those of the intermediate floret not ciliated, the interior glume of the lateral florets, or that nearest the central floret, much broader than the rest, with a wider membranous border, which is expanded most on the inner side into a semilanceolate shape, varying in degree but always very apparent. *Palea* lanceolate, smooth, much shorter than the glumes, the outer one 5-ribbed, the two lateral ribs nearly marginal and more faintly marked; awned, the awn of the central floret as long as those of the glumes, those of the lateral florets much shorter, all scabrous; there is, besides, a bristle-like awn arising from the base of the exterior valve of each floret in front between its infolding margins, about half the length of the palea, usually ending in two or three spinulose points; superior and inner palea more or less acute or even subaristate, with two central green ribs, at which there is a strong reduplication of the valve inwards, forming a groove partly embracing the ovary. *Lateral florets* imperfect.

This species much resembles *H. pratense*, but is of more humble growth. The lower half of one of the calyx-awns of the two outer or sterile florets being dilated, or as it were winged unilaterally, is a beautiful mark of distinction between this and our two other species of *Hordeum*. The awns or bristles of *H. maritimum*, especially of the central floret, are rather larger than those of *H. pratense*, in which that of the outer valve of the valve of the corolla greatly overtops the rest.

XXX. TRITICUM, Linn. Wheat-grass.

Spikelets solitary, transverse, the sides (not the backs) of the glumes and florets directed to the rachis, compressed, many-flowered. *Glumes* 2, opposite, nearly equal; both have 3 or more nerves or ribs. *Glumellas* 2, lanceolate, outer one acuminate or awned at the summit, inner bifid at the point, minutely ciliated on the ribs. *Caryopsis* free.

There are two natural groups in this genus: 1st, the large annual species, foreign to our country, which are cultivated so extensively as *Bread-corn*; and, 2ndly, the smaller perennial species, many of which are natives with us. These

some authors look upon as two distinct genera, *Triticum* and *Agropyrum* (Beauv., Lindl.) We have only the latter genus or group in Britain.

1. *T. repens*, L. *Creeping-rooted Wheat-grass. Couch-grass.* "Spike elongated, spikelets 4—8 flowered, glumes acuminate awned or awnless 5—7 ribbed, outer glumella acuminate or with an awn scarcely ever so long as the glumella 5-nerved, rachis of the spikelets scabrous, leaves plane or slightly involute at the edge, root creeping."—*Br. Fl.* p. 556. *E. B.* t. 909. *Host. Gram. Aust.* ii. 17, t. 21 (minime bona).

β. littorea. Very glaucous. An *T. glaucum*, *Host. Gram. Aust.* iv. 6, t. 10? and as Professor Meisner, when he saw it here this summer (1850), supposed it to be.

On hedgebanks, borders of fields, in waste and cultivated places, woods, &c.; common. *Fl.* June—August. 2f.

β. By the salt-ditches on the Dover at Ryde. Abundant under the shore at Apley, and along the coast at the Priory, Sea View, &c. Under Apley walk the plant may be found exhibiting all gradations between the unawned and awned state, and of every colour between the usual inland green and the intensest blue or glaucescent hue which it commonly assumes near the sea.

2. *T. junceum*, L. *Rushy Sea-side Wheat-grass.* "Spikelets distinct 4—6 flowered, glumes obtuse many-ribbed, outer glumella obtuse or slightly mucronulate 5-nerved, rachis of the spike smooth or minutely toothed on the angles, leaves involute pungent, root creeping."—*Br. Fl.* p. 556. *E. B.* t. 814. *Host. Gram. Aust.* ii. 18, t. 22? (dubia); *idem*, iii. 23, t. 33 (bona). *Sibth. Fl. Græc.* i. t. 99.

On sandy banks and hillocks by the sea-beach; in great plenty. *Fl.* June, July. 2f.

E. Med.—Very fine along the shore a little E. of Ryde, just beyond Apley house. Sandy shore at the Priory, 1846.

W. Med.—On the sandy shore at Norton, in great abundance, 1846.

Whole plant rigid and glabrous. *Root* (rhizoma) creeping extensively in the loose sand, slender, tough and rigid, emitting numerous whitish, downy, branched and flexuose, thready fibres, and white runners with sheathing scales at the joints, sometimes ending in ovoid bulbous bodies, consisting of densely aggregated imbricating laminæ. *Culms* from about 12 to 18 inches or 2 feet high, simple, round, slender, glaucous and finely striated above, smooth, pale and polished below, filled with cellular tissue, inclining or ascending, often decumbent at the base, which is buried in the sand, and of a pale whitish or straw-yellow colour tinged here and there with purple, usually naked for some little distance below the spike, with a single geniculation above the centre of the culm, above which the latter is slightly incurved or arcuate. *Leaves* spreading or divaricate, narrower than in our other species, and appearing still more so from their much greater tendency to become involute, which they always are near their points, that hence appear subulate, the rest of the leaf simply concave or caniculate, often plane or nearly so at their base; deeply and closely sulcato-striate and very glaucous above from the short, dense, bristly pubescence which covers their upper side, and which is simple, appressed and diverging; dull green, glabrous and slightly striated beneath, their margins a little thickened, cartilaginous and somewhat hairy at the junction with the sheath. *Sheaths* long, close, striated, in all my specimens quite glabrous (sometimes slightly downy or minutely scabrous, Bertol.), often tinged with purple, the lower ones pale or straw-coloured. *Ligule* scarcely a line in length, truncate, minutely erose. *Spike* about 4 to 6 or 8 inches long, slightly bowed with the culm, seldom quite straight or erect as in our other two species.

Spikelets distichous, alternate, about 9 or 10 lines in length, mostly 4 or 5, occasionally but 3, or in luxuriant specimens 7- or 8-flowered, somewhat remote, about $\frac{1}{3}$ ds or $\frac{1}{4}$ ths of their own length apart, the lowermost about their own length asunder, those on the same side of the broad glabrous rachis leaving a considerable space of the latter naked between each spikelet (in *T. repens* the whole rachis is covered by the imbricating spikelets from end to end), somewhat lax or patent (not erect or appressed as in that), and, like the rest of the plant, of a pale glaucous or sea-green colour. *Glumes* cartilaginous, about $\frac{1}{3}$ ds the length of the florets, concave, nearly equal, narrowly oblongo-elliptical (when flattened), obtuse and rounded at apex, which is often oblique, entire or with a broad shallow notch, many-ribbed, the ribs dark green, running the entire length of the glumes, but from their inequality of breadth and position difficult to number with exactness, being often wholly or partially divided, and then liable to be counted as two; in general they may be stated to be from 8 or 10 to 12; margins of the glumes white, perfectly entire and glabrous. *Paleæ* elongato-elliptical, flattish and obtuse with rounded points; *outer*, larger and lower glabrous, very distinctly 6-ribbed, the ribs subequidistant, the two marginal ones green, double, the rest paler and more slender; *inner* and smaller valve rather shorter, submembranaceous, the margins folded flat inwards, with a fringe of fine hairs along the edges of the fold, and a pair of strong green ribs near the latter on its inner side at some distance from the broad, pellucid, slightly ciliated, true margin of the valve. *Stamens* much exserted; *anthers* very long and narrow, straw-yellow or violet. *Styles* distant, simple. *Nectary* of 2 distinct, ovoido-globose, pellucid lobes, very gibbous at the back, produced into flat, ciliated, acute points.

Dr. Parnell very justly observes that in this species the spikelets are not easily detached without breaking the rachis; whereas in *T. repens* they are so much less firmly seated as to be easily separated without injury to the rachis.

Our three British species of *Triticum* are very obscurely defined in practice, however clearly they may appear to be so in books. My own belief is that *T. junceum* is but a sea-side variety of *T. repens*,* while *T. caninum*† is to all appearance truly distinct from either.

XXXI. BRACHYPODIUM, *P. de Beauv.* False Brome-grass.

"*Spikelets* solitary, transverse to the rachis, alternate, remote, linear, cylindrical-compressed, many-flowered. *Glumes* 2, opposite, unequal, shorter than the contiguous lower floret. *Glumellas* 2, rounded on the back, 7-ribbed, setigerous or awned at the extremity; inner one retuse, coarsely fringed on the ribs above."—*Br. Fl.*

A genus properly separated from both *Bromus* and *Festuca*, to which the present is closely allied, by its sessile, nearly cylindrical, not compressed spikelets, and in having the parts of fructification enclosed by the inflexed edges of the inner valve of the corolla. In their leaves the species have the broad hairy foliage of the true Bromi, but the awns of the florets are terminal as in *Festuca*, the inner valve of the corolla being very obtuse or truncate, which is not the case in

* *T. acutum*, DC., appears, from the description of the species given by Mertens and Koch ('Deutschland's Flora,' i. p. 702), to be a connecting link between our present plant and *T. repens*. I find a form on the sandy shore at Norton, Freshwater, which I suspect to be that referred to by the same authors at p. 703, and which they are in doubt whether to consider as a species or as merely a transition variety from *T. junceum* to *T. acutum*. Our plant is certainly more nearly allied to *T. repens* than to *T. junceum*, and scarcely differs from the former, except in its somewhat remote spikelets.

† This species is not yet detected as an Isle-of-Wight plant. *Edrs.*]

the two allied genera. In the arrangement of the florets also *Brachypodium* differs from *Bromus* and *Festuca* just as *Lolium* and *Triticum* differ in the disposition of theirs. In *Bromus* and *Festuca* the backs of the florets are in the same plane with the chief stalk of the panicle; in *Brachypodium* the edges of the florets are turned towards the main stem as in *Triticum*, the back of each spikelet being then perpendicular to the stalk.

1. *B. sylvaticum*, Beauv. *Slender False Brome-grass*. "Spike drooping, spikelets solitary nearly cylindrical secund, awns of the upper florets longer than their glumellas, leaves flat flaccid, root fibrous."—*Br. Fl.* p. 558. *Host. Gram. Aust.* i. 17, t. 21. *Festuca*, *E. Fl.* v. i. p. 149. *Bromus*, *Poll: E. B.* t. 729.

β. Spikes nearly erect.

Common throughout the island in moist woods, thickets, and on shady hedgebanks, as well as on dry elevated downs and heaths. *Fl.* June, July. 24.

β. In open heathy or grassy places, as at Bonchurch, behind Tolt copse, and among the young fir-plantations about the foot of the hill leading up to Hampstead farm. This is very different from *B. pinnatum*, which has not yet been detected in this island, though Wahlberg makes our *B. sylvaticum* a variety of that species.

The inner palea overlaps and encloses two of the stamens and the ovary, leaving the scale, which is deeply cloven almost to the base, and the remaining stamen between the valves, free: this third or outer stamen lies in and exactly fills the space left between the inflexed edges of the inner valve.

β. "On the downs in various places there is a very deceptive-looking *Brachypodium*, which I suppose is a variety of *B. sylvaticum*, but it has some of the characters of *B. pinnatum*, such as the erect pinnated spike, cylindrical hairy spikelets (those of *B. pinnatum* are usually smooth), and almost glabrous leaves, but then the leaves are broad and the awns long, which are strong characters of *B. sylvaticum*. The plant appears to be nearly intermediate between the two.* The above remarks of Mr. Saunders apply to a plant I had repeatedly observed in dry, open and hilly places in various parts of the island, and which, like him, I had always considered a variety of *B. sylvaticum*, differing merely in its more erect or less drooping spikelets.

XXXII. LOLIUM, Linn. Darnel.

"Spikelets solitary, compressed, approximate, placed edgewise to the rachis, alternate, with 3 or 4 perfect florets. Glumes solitary, or 2 and the one next the rachis small; outer one with several nerves about as long as or longer than the lowest contiguous floret. Glumellas 2, outer one awnless or awned."—*Br. Fl.*

1. *L. perenne*, L. *Perennial Darnel*. *Rye-grass* or *Ray-grass*. "Spikelets 6—8 flowered, glume solitary scarcely longer than the lowest floret, florets lanceolate awnless or nearly so, root producing leafy barren shoots."—*Br. Fl.* p. 558. *E. B.* t. 315. *Host. Gram. Aust.* i. 20, t. 25.

β. Spikelets branched.

In meadows, pastures, waste ground, cornfields, and by roadsides; everywhere. *Fl.* June, July. 24 or 3.

* W. Wilson Saunders, Esq., in litt., July, 1841.

β. In the Spencer road, Ryde, *Dr. Bell-Salter*!! who also finds this form extremely common about Ryde, as on the Dover, between Ryde and Ashey, and in other places.

2. *L. temulentum*, L. *Bearded Darnel*. Vect. Cheat. Spikelets about 6-flowered equal to or shorter than the glume, florets awned or awnless elliptical in fruit tumid, root annual without barren shoots.—α. Florets with rigid awns about as long as or longer than the glumella.—*Br. Fl.* p. 559. *E. B.* t. 1124. *Host. Gram. Aust.* i. 20, t. 26.

β. Florets imperfectly awned. *L. arvense*, L.: *E. B.* t. 1125. *Host. Gram. Aust.* iii. 17, t. 25.

Amongst corn and about the borders of cornfields; most frequently in barley. *Fl.* July. ☉.

E. Med.—Between Lake and Sandown, *Dr. Bell-Salter*, who kindly presented me with the only two specimens he found, 1838. Amongst barley at Whitcomb, *Mr. Wm. Hughes*!!

W. Med.—Cornfields about Yarmouth, *Mr. Squire*.

This species is called Cheat in the Isle of Wight, from its resemblance to the grain amongst which it grows,—a name applied, for the same reason, in some places to *Bromus secalinus*.

† 3. *L. multiflorum*, Lam. *Annual Many-flowered Darnel* or *Ray-grass*. "Spikelets 6—14 flowered, glume solitary scarcely as long as the lowest floret, florets lanceolate awned, roots producing leafy barren shoots."—*Br. Fl.* p. 559. *L. mult.* β. *aristatum*, *Gaud. Fl. Helv.* i. p. 354. *L. italicum*, *A. Braun: Parnell*, *Scot. Gr.* p. 142, t. 65. *L. perenne* var., *Parn. Gr.* tt. 138, 139, 140, 141.

In a clover-field near Fernhill, 1841. Plentiful and with very long awns along a private path to Brooklands (the Rev. Augustus Hewitt's) from Binstead, *Dr. Bell-Salter*!!!

This is beautifully distinguished from *L. perenne*, according to Mr. Woods, by the aestivation of the leaves in the barren shoots, which in the latter are simply folded, but rolled in the former. (See 'Phytologist' for Feb. 1845).

I learn from my kind correspondent, Dr. Wood, of Broughton, by Manchester, that *L. multiflorum* is common in that vicinity, and that specimens sent by him to Sir W. Hooker exactly agreed with continental specimens of the species in that gentleman's herbarium. Dr. W., who has kindly furnished me with Lancashire specimens, exactly similar to my own from this island, says it is annual.*

XXXIII. LEPTURUS, *Brown*. Hard-grass.

"Spike terete, solitary, separating at the joints. Spikelets solitary in each joint, imbedded in cavities alternately on opposite sides of the rachis and placed edgewise to it, with 1 (or 2) fertile florets and a superior minute rudimentary (sometimes obsolete) neuter one. Glumes 1 (or) 2, collateral, on the opposite side from

* [It is evident, however, that our author was not fully convinced of the distinctness of this plant as a species, by the following remarks, penned immediately before his leaving England. He observes, it is "probably either naturalized by direct importation with foreign grass-seed, or an annual or biennial state of *L. perenne*, produced by culture, as suggested by the authors of the sixth edition of the 'British Flora.'" (*Phytol.* iii. p. 1119).—*Edrs.*]

the rachis and covering the floret, cartilaginous, several-nerved. *Glumellas* of the fertile floret 2, scarious, awnless."—*Br. Fl.*

1. *L. incurvatus*, Trin. *Sea Hard-grass*. "Spike subulate, glumes 2."—*Br. Fl.* p. 560. α . Spike curved. *Rottbœllia*, *L.*: *E. B.* t. 760. *Host. Gram. Aust.* i. 18, t. 23.

β . Spikes very slender and filiform, nearly straight. *Rottbœllia filiformis*, *Roth.*

In salt-marsh meadows and pastures, and along the grassy borders of creeks and inlets of the sea and tide-rivers; not unfrequent. *Fl.* July, August. \odot .

W. Med.—Most abundantly and very fine in salt-marshes by Newtown, 1842. In cultivated fields above Freshwater bay, a short distance from the hotel on the ascent of the down towards the Needles, in great plenty, where it was pointed out to me by the *Rev. G. E. Smith*, who supposes it may have been conveyed with sea-weed as manure to the odd situation. Thorness bay, *Rev. Wm. Coleman*, 1842.

β . In the meadow between Quarr abbey and the sea, 1843. At Springfield, on the waste ground in front of the houses, near what was until lately the Vernon hotel; also in salt-marsh meadows between Springfield and Sea View, 1843. On the embankment by Yarmouth mill, abundantly; also common along the Yar generally. Amongst short grass near the shore at Norton, just opposite to where the road leading to Freshwater goes off from the beach. Newtown marshes, and between Yarmouth and Freshwater, 1842. By the Medina near Dallimore's farm, in plenty (a stouter form), *Miss G. Kilderbee!!!* Along the shore between W. Cowes and Egypt, *idem*. [Around Brading harbour, in many places, *A. G. More, Esq.*, Edrs.]

A singular grass, bearing some resemblance when in flower to *Lolium perenne*, delighting to grow amongst the herbage skirting the little creeks or inlets of salt-water rivers, where its unopened spikes are not readily distinguished from the leaves or barren scapes of some of the smaller *Junci*, even after the white anthers have begun to protrude, looking as if accidentally blown on and adhering to the supposed rushes. In these situations the plant has a very slender habit, the stems being quite filiform, when it is the *R. filiformis* of Roth and others, but in more exposed places this grass assumes a stouter, shorter and more rigid habit; the spikes are then remarkably incurved, and thus we find it in open fields near Freshwater. The following description is drawn up from specimens of the stouter form of variety β ., gathered amongst other grasses by the Medina, which, from its great frequency in such situations, appears the most natural and congenial to this grass.

Root a tuft of brownish fibres. *Culms* numerous, from 3 or 4 inches to a foot in height, erect or ascending, round, slender, hollow, very smooth and polished, with several tumid geniculate joints towards the base, leafy on their lower half, leafless above. *Leaves* linear, very narrow, bright green, taper-pointed, rough along their more or less involute edges with minute prickles, and like the rest of the plant quite glabrous. *Sheaths* long, close. *Ligule* very short, abrupt and jagged. *Spike* terminal, 2—4 inches long, either straight or making with the upper leafless portion of the culm a curve like *Spartina stricta*, to which genus this grass has been erroneously referred by some authors. *Florets* alternate, closely applied to the rachis, which is flattened and grooved on opposite portions of its entire length to receive them, and jointed at the base of each floret, which fits into its place so exactly before blossoming as to appear an integral portion of the spike, which then represents a miniature bamboo. *Glumes* a little unequal, very thick, stiff and pointed, the edge of the smaller slightly overlapping that of the larger, which is therefore analogous to the inner valve of other grasses, the borders and tip of each glume white and membranous, both marked on the back with strong green ribs; sometimes the two are united into one piece. *Palea* lanceolate, unequal, as long as the calyx, of a delicate, thin, membranous texture, the larger and outer with a single green rib down the

middle, the smaller and inner ribless. *Anthers* white or yellowish; in many florets I find the stamens entirely wanting. *Ovarium* subglobose. *Styles* short; *stigmas* branched, plumose and spreading.

From the analogy of this grass to *Lolium*, it is perhaps grateful to cattle in salt-marsh pastures, but its natural produce in such situations is too insignificant to deserve attention.

†† *Spike compound. Flowers or spikelets unilateral.*

XXXIV. SPARTINA, Schreb. Cord-grass.

"*Spike compound. Partial spikes erect, racemose. Spikelets sessile, awnless, arranged alternately in 2 rows on one side of the partial rachis, laterally compressed, with one fertile and scarcely any rudiments of a neuter floret. Glumes 2, very unequal, lanceolate, compressed. Glumellas 2, compressed, lanceolate, acuminate. Styles united half-way up. Stigmas elongated.—Ligules very short.*"—*Br. Fl.*

1. *S. stricta*, Roth. *Twin-spiked Cord-grass.* Spikes 2—3 subgeminate coarctate, florets hairy, larger calyx-valve simply acuminate, leaves shorter than the spikes tapering at the base and articulated upon their sheaths, the lower ones deciduous, rachis scarcely produced beyond the terminal floret of each partial spike. *Sm. E. Fl.* i. p. 136. *Br. Fl.* p. 561. *Lindl. Syn.* p. 298. *E. B.* vi. t. 389 (*Dact. stricta*), *Bromf. in Hook. Comp. to Bot. Mag.* ii. p. 254. *Bertol. Fl. Ital.* i. p. 575.

In muddy salt-marshes, creeks and inlets of the sea, and about the mouths of rivers within reach of the tide, in many places. *Fl.* July—September. 24.

W. Med.—Plentiful along the Wootton river, below Wootton bridge.

W. Med.—Shores of the Medina above Cowes, frequent. Salt-marshes along the Yar, and near the shore at Norton. Newtown salt-marshes, abundantly. Yarmouth, in abundance, *Mr. Snooke !!!*

Herb of a pale, dirty, yellowish or brownish green, sometimes with a purplish tinge. *Root* creeping extensively by long jointed suckers, and emitting at the crown several white, tough, simple or branched fibres, running deep into the mud in all directions. *Culms* more or less ascending at the base, afterwards erect, slightly incurved or arcuate, from 6 to 8 or 10 inches high, seldom exceeding a foot or 15 inches at most; round, hollow in the centre, rigid, smooth and leafy, eased for a considerable distance upwards with the blackish, half-decayed and leafless sheaths of the previous season,* and from thence to the summit with the olive-green or purplish ones of the current year. *Leaves* usually much shorter than the flower-spikes, rarely equalling but never exceeding the latter, quite erect and flat, except near their extremities, where they are involute,† linear-lanceolate, taper-pointed, a little arcuate, tough and rigid, quite glabrous, with thin, white, cartilaginous edges, finely striated, particularly on their upper surface, which is

* The radical shoots or suckers produced with the flowering culms I imagine survive the winter, losing their old leaves, which fall away at the articulation with their sheaths, and developing new ones towards the period of inflorescence along with the nascent stems, which the withered but persistent sheaths of the first year continue to enclose and protect.

† Erroneously described by Hooker as involute, which they never are in this species, nor in *S. alterniflora* till some time after gathering, or when dried with insufficient pressure.

ploughed into deep furrows, with broader and whitish cartilaginous ridges between them, giving this side of the leaf a pale glaucous colour, the under being of a yellow or almost olive-green: the base of each leaf narrows by a short but easy taper into the long, smooth, tight and striated *sheath*, which is closed all around the culm nearly to the summit, its point of junction with the leaf being marked by a faintly projecting fillet or annular articulation, at which the leaf separates in process of time by natural decay, or may be easily detached, leaving behind the truncate and still investing sheath. *Ligule* extremely short, a mere row of unequal bristly hairs. *Spike* terminal, 3 or 4 inches long, of 2 or sometimes 3, rarely 4, close erect branches, of unequal length; *spikelets* numerous, linear, hairy, $\frac{1}{2}$ an inch in length, inserted unilaterally and alternately along two faces of the compressed triangular rachis, which is grooved for their partial reception, its extremity produced into a straight point extending but little beyond the highest or ultimate spikelet of each branch. *Glumes* chaffy, much compressed and very unequal; the inferior and *outer* scarcely $\frac{2}{3}$ the length of the inner, extremely narrow, subulate and acute, ribless; superior and *inner* glume seated on a thick green base or pedicel, from the side of which, a little lower down, the outer glume arises; linear, incurved, 2-ribbed above the back, clothed with long, appressed, silky hairs, and more or less fringed with bristly ones on the dorsal ridge, its apex sometimes torn but not emarginate, very acuminate. *Paleæ* much compressed, nearly equal, linear and chaffy; upper and *inner* valve rather longer than the other, quite glabrous, faintly 2-ribbed down the centre,* with a fold inwards of the valve between them, its point very acute and bifid; lower and *outer* valve bluntish and entire at the apex, slightly hairy, especially above, with a single green dorsal rib, armed its own length with a row of long, slender, almost appressed spines. *Anthers* pale buff-colour. *Ovarium* oblong, tapering into the very long closely cohering styles, that terminate in yellowish white, simple and feathery *stigmas*. *Scale* none.

This rank-smelling grass† is quite destitute of beauty; nor does it recommend itself by any known use, unless by its creeping and fibrous roots serving to consolidate the soft fluctuating soil on which it grows, and affording a safe, if not a dry, footing over the dreary waste of flat salt-marsh. In its geographical distribution the Twin-spiked Cord-grass is confined to the South and centre of Europe, terminating both in Britain and on the Continent below 53° of latitude, and is principally confined to the East and South-east coast of England, ranging to neither Scotland nor Ireland. Though found sparingly in Devonshire (ex herb. Smith), it seems to be everywhere scarce to the westward of this island, but extends southward into Africa as far at least as Mogador, from whence I have seen specimens. Our other British species, *S. alterniflora*, Lois., discovered by myself, in 1836, growing abundantly at Southampton, and within thirteen miles of our shores, does not occur on this side of the Solent.

* These ribs, being extremely slender and pellucid, are only to be seen distinctly in certain lights.

† The fœtid odour of our two British species of *Spartina* seems common to the genus, for Gronovius, in his 'Flora Virginica,' mentions the rancid odour of *S. cynosuroides*, an American species, confused by Linnæus with our *S. stricta*, to which the description in the 'Species Plantarum' scarcely applies, though the true synonym of Ray is appended.

CLASS III.

ACOTYLEDONOUS OR CELLULAR PLANTS.

"Whole plant with a cellular structure (except in the true ferns, which have tubular vessels among the cells, and hence approach the 2nd class). There are no real flowers, nothing that can be considered as stamen and pistil. The seeds, or organs of reproduction, are without any distinct embryo, consequently without any cotyledon.—This Class corresponds with the 24th, Cryptogamia, in the Linnæan system."—*Br. Fl.*

Order LXXXVIII. EQUISETACEÆ, *DeCand.*

"Fructification terminal in spikes or catkins, consisting of peltate polygonous scales, on the under side of which are from 4—7 *involucres*, which open longitudinally and contain numerous globose bodies enfolded by four filaments clavate at their extremities."—*Br. Fl.*

I. EQUISETUM, *Linn.* Horse-tail.

"Character of the genus the same as that of the order."—*Br. Fl.*

* *Fertile stems unbranched, succulent, appearing before the sterile ones, which have whorled branches.*

1. *E. Telmateja*, Ehrh. *Great Water Horse-tail*. "Sterile stems with very numerous (about 30) striæ and nearly erect simple branches, stem cylindrical smoothish, sheaths with close small subulate teeth, fertile stems (short) without branches clothed with ample loose sheaths having many subulate 2-ribbed teeth."—*Br. Fl.* p. 581. *E. fluviatile*, *L.* (in part). *Sm. E. B.* t. 2022. *Fl. Dan.* ix. t. 1469 (opt.)

In wet hedgerows, on ditchbanks, by river-sides and in other watery places. *Fr.* April.

E. Med.—Plentiful all along the hedge on the right-hand in the road between Apley and St. John's. Park woods, near Nettlesstone. [On nearly all the slipped land of the shore and cliffs throughout the East Medina, *Dr. Bell-Salter*, Edrs.]

W. Med.—In a ditch at Lake farm, near Gatcombe, *B. T. W.* [Moortown bog, Brighstone, *A. G. More, Esq.*, Edrs.]

2. *E. arvense*, *L.* *Field Horse-tail*. *Corn Horse-tail*. "Frond attenuated upwards, sterile stem slightly scabrous with 12—14 furrows, teeth of the sheath lanceolato-subulate 1-ribbed to the

point, branches simple erecto-patent, fertile stem without branches, its sheaths remote loose."—*Br. Fl.* p. 582. *E. B.* t. 2020.

Abundant on stiff clay soil in cornfields, and on the landslips. *Fl.* March, April.

The long, blackish, creeping *root* sends up several flowering stems in early spring, from 6 to 12 inches high, erect, pale, cylindrical, hollow, jointed and succulent, terminating in a cone of 2 or 3 inches in length, at first greenish, afterwards brown. *Sheaths* 4 to 8 or 10, pale brown, inflated, loosely clothing the stems, terminating in 20 or more dark brown, long and finely pointed teeth; the sheaths are in the young plant approximate, but when in flower remote. After the *fertile stems* have died off, the *sterile* ones come up.

The elastic action of the spiral filaments is beautifully shown by shaking a little of the ripe seed from a portion of the catkin on a piece of thin window-glass, and bringing it under a high power of the microscope. At first little action is perceptible, the filaments merely relaxing their spiral grasp in some degree, but in a few minutes, as if by one consent, they start asunder, and, spreading widely, entirely liberate the green globular body they before embraced, and to which they are still attached by their base. The simultaneous action of so many little atoms exerting this faculty of irritability gives an appearance of animation to the mass. The filaments are delicately transparent, and seem flat and unjointed; their extremities are somewhat triangular, and covered with colourless transparent globules.

*** Fertile stems similar to the sterile ones; simple or branched.*

3. *E. sylvaticum*, L. *Wood Horse-tail*. "Sterile and fertile stems with about 12 furrows, branches compound whorled decurved, sheaths lax with about 6 or 12 long membranaceous obtuse teeth."—*Br. Fl.* p. 582. *E. B.* t. 1874.

In moist or boggy woods, thickets, and on wet shady banks, but very uncommon in the Isle of Wight. *Fr.* April, May.

E. Med.—In Apse-heath withy bed, plentifully, 1837. Parsonage lynch, Newchurch.

Rhizoma perennial, blackish brown, tough, slender, sparingly branched, descending perpendicularly or creeping horizontally, but to no great length, emitting a few dark thready fibres. *Fertile stems* solitary, rarely 2 or more from the same rhizoma, from about 6 or 8 to 12 or 18 inches high, quite erect, but becoming bowed or arcuate some time after gathering, scarcely the thickness of a quill, succulent, soft and weak, without rigidity, cylindrical, tapering upwards, pale green or nearly colourless, rather faintly striated with from about 12 to 14 furrows, whose intermediate ridges appear under a lens rough with minute asperities, hardly perceptible to the touch: when they first rise from the ground the fertile stems are quite simple, but with the opening catkin most of them begin to develop a *whorl* of branches at each articulation, from the highest joint downwards in succession, to the number of from 1 or 2 to 8 (never more, *Newm.*), mostly about 3—5; a few of the stems remain unbranched and quickly disappear: the number of branches in each whorl corresponds to that of the furrows on the stem, to the ends of which they are opposite, compound, bright green, gracefully arching or decurved. *Sheaths* numerous, loose, a little inflated or ventricose, shorter than the internodes, strongly ribbed and furrowed, dividing at top into 3 or 4 oblong or lanceolate, pointed, membranaceous lobes, of a pale brown, the lower part of the sheaths greenish or towards the bottom of the stem becoming uniformly of a deep reddish or blackish brown colour. *Catkin* from about 9 to 12 or 15 lines long, on a soft hollow stalk about its own length or rather more, ovoid-oblong or truly conical, often a little curved or oblique, abrupt or truncate at base, the apex obtuse or slightly pointed, the very narrow scales at first greenish white, afterwards of a pale reddish brown or fawn-colour. *Spore-cases* (sporangia) oblong or

conical, obtuse or pointed, dark green from the included spores, which are partly colourless. *Barren stems* appearing simultaneously with the fertile and very similar to them in general appearance, but more slender, with smaller, shorter and closer *sheaths*, more numerous *whorls of branches* (10—20, *Newm.*), that are greatly more elongated and very slender, drooping in an arching manner as in the fertile plant, the branches composing each whorl gradually diminishing from the lowermost whorl upwards, so as to give a conical or pyramidal outline, the apex terminating in a simple branch and nodding.

A most elegant and graceful species, far more common in mountainous districts than with us.

4. *E. limosum*, L. *Smooth Horse-tail*. "Stems smooth striated, striæ about 16—18, teeth of the sheath short rigid distinct, branches nearly erect simple whorled often abortive, catkin terminal upon the stem."—*Br. Fl.* p. 582. *E. B. t.* 929. *E. fluviatile*, L. (in part).

β. Branches abortive or wanting.

In shallow slow or stagnant water with a muddy bottom; frequent. *Fr.* June, July.

E. Med.—In marsh-ditches on Sandown level, abundant. In a small pool on the S. side of Cuthy-bottom copse, betwixt Westridge house and Barnsley farm, 1848.

W. Med.—Abundant in the moors at Moor Town, Brixton, with *E. palustre*, 1846.

β. Steephill, *Albert Hambrough, Esq.*, 1839!

5. *E. palustre*, L. *Marsh Horse-tail*. "Stems deeply furrowed roundish with 4—8 angles, teeth of the sheaths wedge-shaped acute brown at the point and membranaceous at the margin, branches simple whorled gradually shorter upwards (sometimes abortive), catkin terminal obtuse."—*Br. Fl.* p. 582. *E. B. t.* 2021.

β. Proliferous.

In marshy or boggy places, on wet gravelly or sandy banks, turf-moors, &c.; less frequent than the last. *Fr.* June, July.

E. Med.—Shanklin chine.

W. Med.—Plentiful with *E. limosum* in wet meadows about Brixton, at Moor Town, &c., 1846. Abundant in the moist meadows at Easton, Freshwater gate, where the proliferous var. also grows, 1844.

β. In the old gravel-pit just beyond the bog at Cockleton, 1845. Between Debbourne turnpike and Gurnet farm, by the side of the road, *Miss G. Kilderbee*!

Order LXXXIX. POLYPODIACEÆ, *R. Br.*

"*Capsules* dorsal or marginal, surrounded by a ring, reticulated and pellucid, opening transversely and irregularly. *Fronde* circinate in æstivation."—*Br. Fl.*

I. CETERACH, *Willd.* *Ceterach*.

"*Sori* oblong or linear, straight, scattered, arising from reticulated veins, covered (as is the whole back of the frond) with chaffy scales. *Involucre* none (or obsolete)."—*Br. Fl.*

1. *C. officinarum*, Willd. *Common Ceterach*. "Fronds pinnatifid covered beneath with imbricated chaffy scales, segments ovate obtuse, scales entire."—*Br. Fl.* p. 566. *Scolopendrium*, *E. B. t.* 1244.

On old walls, roofs and limestone rocks; not common.

E. Med.—On Brading church. Wall at Cooper's, near Bembridge, abundantly, *Dr. Bell-Salter!*

W. Med.—Carisbrook-castle walls, *G. Kirkpatrick, Esq.!!!*

Rhizoma perennial, short, scaly, not creeping, concealed by the tufted, blackish and scaly fibres or real roots. *Fronds* numerous, mostly all fructiferous, from 2 to 6 inches long, erect or spreading, linear, somewhat fleshy, dark green, a little glaucous, smooth and naked above, thickly imbricated beneath with rusty brown, lanceolate, pointed and entire, chaffy scales, which in the younger frond have a silvery aspect and are at all times easily detached; sinuato-pinnatifid, the lobes alternate or subopposite, roundish ovate, very obtuse, usually approximate or subconfluent, more rarely a little remote, entire or slightly waved or crenate along the edges, which appear membranaceous or fringed by the incurved points of the contiguous dorsal scales; flat at first, afterwards becoming a little hollowed or concave. *Stipes* very short, subcompressed, scaly like the frond. *Sori* linear-oblong.

II. POLYPODIUM, Linn. Polypody.

"*Sori* roundish. *Involucre* 0. *Veins* simple or forked (in the *British species*)."—*Br. Fl.*

1. *P. vulgare*, L. *Common Polypody*. Fronds deeply pinnatifid, the segments linear-lanceolate obtuse crenulate approximate, upper ones gradually smaller. *Br. Fl.* p. 566. *E. B. t.* 1149.

β. Lower lobes of the frond forked.

γ. Frond doubly pinnatifid.

On shady hedgebanks, trunks of trees, and in the clefts of rocks, &c.; plentiful everywhere.

β. Steephill, *Albert Hambrough, Esq.!*

γ. On a rock at Bonchurch, 1845, *idem*. [Shady lane at Brighstone, *A. G. More, Esq.*, Edrs.]

γ. This remarkable form of the Polypody resembles pretty closely that given in Newman's 'British Ferns,' fig. 9, p. 113, but in this the secondary segments or pinnules are broader, and divided close down upon the midrib.

My specimen from Mr. Hambrough, as is usually the case in the var. called *P. cambricum* by Linnæus, is destitute of fructification.

III. POLYSTICHUM, Roth. Prickly Shield-fern.

"*Sori* nearly circular, covered by an indusium seated upon the back of the lateral veins. *Indusium* circular, attached by the centre."—*Bab. Man.*

1. *P. lobatum*, Roth. *Close-leaved Prickly Shield-fern*. Fronds narrow-lanceolate bipinnate attenuated at the base, pinnules rigid convex ovato-elliptical sublunate acuminate aristate oblique and concave at the base and (more or less) decurrent their margins subserrate spinulose, the inferior pinnules chiefly with a distinct tooth or lobe at the base on the upper side, the foremost pinnule of each pair next the rachis larger than the hinder or lower one,

stipes and rachis more or less chaffy, fructification confined to the upper half of the frond. *E. B.* t. 1563. *Br. Fl.* p. 568.

On hedgebanks, in moist woods, &c.; very rare with us.

E. Med.—A single root on a bank of a lane close to Cooper's, near Bembridge, *Dr. Bell-Salter*, 1841—42!!! Bank on the left-hand side of the road going from the lodge at E. Cowes castle towards Whippingham, *Miss G. Kilderbee!** [In the lane and copse by Little Smallbrook, a few plants only, *A. G. More, Esq.*, Edrs.]

This species, if such it really is, may be distinguished from the following by its much narrower more truly lanceolate fronds, gradually attenuated at the base, of a peculiarly firm rigid texture and brighter green colour.

My kind and liberal friend, *Dr. J. B. Wood*, of Manchester, to whom I am indebted for making me better acquainted with this and the following species, remarks that *A. lobatum* is the hardier and more northern plant, growing in situations and at elevations where *A. angulare* is seldom or never found, the latter showing an exclusive predilection for low, warm and sheltered localities. *Sir W. Hooker* observes that *A. angulare* is wanting in Scotland, where *A. lobatum* is sufficiently common.

2. *P. angulare*, Newman. *Angular-leaved Shield-fern*. Fronds broadly lanceolate bipinnate abrupt or truncate at the base scarcely rigid, pinnules distinctly petiolate plane ovate sublunate obtuse aristate obliquely truncate at the base with a large auricle on its upper side the margins deeply serrated spinulose, lowermost pinnules often deeply pinnatifid, those of the basal pair scarcely larger than the rest and nearly equal, stipes and rachis very chaffy. *E. B.* t. 2776. *Br. Fl.* p. 568.

On moist shady hedgebanks and in woods in low sheltered situations; abundantly.

IV. LASTREA, Presl. Shield-fern.

"*Sori* nearly circular, covered by an indusium seated upon the back of the lateral veins. *Indusium* reniform, attached by the sinus."—*Bab. Man.*

1. *L. Thelypteris*, Presl. *Marsh-fern*. Vect. *Ground-fern*. "Fronds pinnate, pinnæ linear-lanceolate pinnatifid, and as well as the rachis slightly pubescent, the segments ovato-acute entire, sori marginal contiguous at length confluent."—*Br. Fl.* p. 569. *Aspidium*. *E. B.* xv. t. 1018. *Francis, Ferns*, p. 29, t. 2, fig. 6. *Newman*.

In low boggy or marshy meadows, but not common, and seldom seen in fructification.

E. Med.—On a piece of boggy land under a high bank above Knighton Lower

* The specimen from Cowes in Miss Kilderbee's herbarium *Dr. Bell-Salter* considers as a *lobatoid* var. of *A. angulare*, but the frond, which exhibits no fructification, has the narrow-lanceolate outline and attenuated base which distinguishes *A. lobatum*; the basal pair of pinnules, too, of each pinna is very unequal, and the pinnules themselves decurrent almost throughout, a very few of the inferior ones on the lowermost pinnæ only being as distinctly petiolate as in the true *A. angulare*. The plant appears, besides, to possess the rigidity of texture characteristic of the genuine *A. lobatum*.

mill, opposite Knighton farm, between that and Hartsash, 1845. Boggy meadow a little above Alverston mill, rather sparingly. In very small quantity on a ditch-bank between Merry Garden and Ninham. Abundant and very luxuriant on the Wilderness, amongst low willows and Sweet Gale; also between that place and Rookley.

W. Med.—Abundant in several parts of the marsh at Freshwater gate, on deep bog, composed chiefly of comminuted shells. In a large willow-bed between Compton and Dunsbury farms, a little N.E. of Compton grange, 1844. Tolerably plentiful in a boggy meadow by Cridmore, *Godman Kirkpatrick, Esq.*!! very large and luxuriant, some of the fronds being upwards of 15 inches long and in fine fructification.

Rhizoma creeping extensively. *Frond* subsolitary (?), lanceolate, erect, from 6 to 18 inches long, pinnate; *pinnæ* linear-lanceolate, a little curved backwards or towards the base of the frond, and gradually diminishing in length towards each extremity, the lowermost of all extremely short and often without a fellow, the rest opposite, subopposite or alternate, distant, bright pale, sometimes dull green, thin and delicate, without resinous glands, deeply pinnatifid, the segments (pinnules) opposite or subalternate, ovato-oblong, a little pointed and for the most part slightly curved forwards, entire, their edges somewhat veined and usually fringed with a few scattered and short hairs, and in the fertile fronds strongly deflexed and involute in fructification; the main central nerve sends off alternate lateral nervures, directed a little towards the apex of the pinnule, and which branch dichotomously a short distance from their origin, running straight and nearly parallel to each other to the margin, rarely with one or other of the branches again divided near its termination, and there is always one or more unbranched secondary nerve near the apex of each pinnule. *Rachis* naked (destitute of chaffy scales), very smooth and polished, with a pellucid horny aspect, and a deep groove along its upper side, very slightly hairy sometimes on the frond, mostly black at the base. *Sori* roundish, placed about midway in a single row between each margin of the pinnules and their central nerve on the branches of the secondary nervures.*

Distinguished from *A. Oreopteris*, which it greatly resembles, by its long, black, creeping roots sending out numerous fibres. Mr. Francis observes, on the authority of Sprengel, that the plant is glandulose, which I find the case in my specimens, though inodorous when bruised. The rachis is represented in E. B. as scaly, though asserted in the text to be smooth or naked, as I find it; neither are the segments of the pinnæ with me at all fringed with bristles as there drawn, but only obscurely crenate, with a very few scattered hairs on the under side and about the main rib.

2. *L. Oreopteris*, Presl. *Mountain Shield-fern*. "Fronds pinnate, pinnæ lanceolate pinnatifid glabrous resinoso-glandulose beneath the segments lanceolate obtuse entire, lowermost ones longer, sori marginal."—*Br. Fl.* p. 569. *Aspidium*. *E. B. t.* 1019.

On elevated boggy places; very rare?

E. Med.—At Apse castle, but very sparingly, 1843, *Dr. Bell-Salter*! On a low wet bank by the roadside between Guildford and Lynn farms, sparingly, 1845, *idem*. The Wilderness, 1846, *Albert Hambrough, Esq.*

3. *L. Filix-mas*, Presl. *Blunt Shield-fern*. "Fronds bipinnate, pinnules oblong obtuse serrated, sori near the central nerve, stipes and rachis chaffy."—*Br. Fl.* p. 569. *Aspidium*. *E. B. t.* 1458 and t. 1949 (*A. cristatum*).

* Hooker says *marginal*, but this is surely a mistake?

β. Pinnules with the margins entire.

In moist shady woods, thickets and hedges; frequent.

β. Apse castle, and copse at Weeks's, 1844, *Dr. Bell-Salter*.

4. *L. spinulosa*, Presl. *Prickly-toothed Shield-fern*. "Fronds linear-lanceolate bipinnate, pinnules oblong inciso-pinnatifid, segments serrate spinoso-mucronate, indusium persistent without marginal stalked glands, stipes clothed with broad roundish concolorous scales."—*Bab. Man.* p. 411. *Aspidium. Br. Fl.* p. 571. *E. B. t.* 1460.

In damp hedge-bottoms and on shady banks, in woods and lanes, &c.; frequent.

Abundant on the Wilderness. In a dell at Apse castle, called Tinker's Hole, in plenty.

The Rev. G. E. Smith, in a letter to me of December 20th, 1842, thus characterizes this fern:—"Frond deltoideo-rhomboid or lanceolate. Rachis strong and thick, and covered more or less with brown scales, which closely envelop the young fronds and the stem (stipes). Pinnæ convex, variously divided. Occurs in dry and wet places with sand, loam and gravel, and in dry and wet stony places on —? reaching 3 feet and more in height."

5. *L. dilatata*, Presl. *Broad Shield-fern*. "Frond ovato-lanceolate bipinnate, pinnules pinnate or pinnatifid, segments serrate spinoso-mucronate, indusium with marginal stalked glands, stipes clothed with long pointed scales with a dark centre and diaphanous margin."—*Bab. Man.* p. 411. *Aspidium. E. B. t.* 1461. *A. spinulosum* β., *Br. Fl.* p. 571.

In similar places with the last; not unfrequent.

E. Med.—Near Ninham farm, by Ryde, &c.

W. Med.—[Moortown bog, Brighstone, *A. G. More, Esq.*, Edrs.]

This fern is thus characterized by the Rev. G. E. Smith:—"Frond lanceolate. Rachis slight. Scales pale brown, and few of them on the young fronds. Pinnules flat, veins sunken above. On wet bushy and grassy spots in woods and on moors." Is it distinct from *L. spinulosa*?

V. ASPLENIUM, Linn. Spleenwort.

"Sori oblong or linear. *Involucres* of the same shape, arising from the lateral veins and opening on one side longitudinally towards the central nerve or midrib."—*Br. Fl.*

1. *A. Adiantum-nigrum*, L. *Black Maidenhair Spleenwort*. "Fronds ovate or deltoid tripinnate below, pinnules ovato-lanceolate inciso-pinnatifid toothed, principal rachis winged, sori at length confluent."—*Br. Fl.* p. 573. *E. B. t.* 1950.

In moist shady hedgerows; frequent.

E. Med.—Very common about Ryde. In the hedge between Ryde and Alder-moor, a little beyond the direction-post. Edge of Quarr copse, along the Newport road.

W. Med.—Common about Brixton, *A. G. More, Esq.*, Edrs.]

2. *A. Trichomanes*, L. *Common Wall Spleenwort*. "Fronds pinnate, pinnæ roundish-oblong obtuse crenated truncato-cuneate at the base (stipes and rachis black)."—*Br. Fl.* p. 573. *E. B. t.* 576.

On walls, rocks, and on dry hedgebanks; apparently of rare occurrence in this island.

E. Med.—On the S.E. side of Quarr-abbey walls, in some plenty, 1850. Near the foot of Messley down, where the road turns off to Newchurch and Knighton, on a bank, sparingly.

W. Med.—Walls of Carisbrooke castle, 1839. Plentiful in a lane facing the 'Suu' public-house. At Chale, 1840. Between Chale and Atherfield, *Dr. Martin*. Mirables, *Albert Hambrough, Esq.*! [On the church at Shorwell, plentifully, *Rev. E. McAll*, Edrs.]

3. *A. marinum*, L. *Sea Spleenwort*. "Fronds pinnate, pinnæ oblong-obtuse inciso-serrate, the superior base rounded and subauriculated, the inferior one truncated."—*Br. Fl.* p. 573. *E. B.* t. 576.

Found sparingly amongst the rocks at Niton, 1845, *Miss Kirkpatrick*!!!

4. *A. Ruta-muraria*, L. *Rue-leaved Spleenwort*. *Wall Rue*. "Fronds bipinnate especially below, pinnules obovato-cuneate lobed or bluntly toothed, involucre jagged at the margin."—*Br. Fl.* p. 573. *E. B.* t. 150.

On walls, churches, &c.; not very common.

E. Med.—At E. Cowes, on a wall. On a wall in the Spencer road, Ryde, in tolerable plenty, 1847. On Arreton church.

W. Med.—On Calbourne and Freshwater churches. On rocks at Niton, *G. Kirkpatrick, Esq.*

VI. ATHYRIUM, Roth. Lady-fern.

"Sori oblong, reniform. *Indusium* opening towards the central nerve or midrib, margin free."—*Bab. Man.*

1. *A. Filix-femina*, Roth. *Common Lady-fern*. "Fronds broadly lanceolate bipinnate, pinnules linear-oblong acute often drooping inciso-serrate, serratures bi-tridentate acute, lower one at the upper margin large auricled, sori oblong at length arched at the base."—*Br. Fl.* p. 574. *Aspidium*. *E. B.* t. 1459.

On moist rocks and in wet boggy or heathy places; frequent.

E. Med.—Very abundantly on damp hedgebanks on the skirts of Blackpan common and parts adjacent, 1848. Very luxuriant in Shanklin chine, *Rev. G. E. Smith*.

W. Med.—[Moortown bog, Brighstone, *A. G. More, Esq.*, Edrs.]

VII. SCOLOPENDRIUM, Sm. Hart's-tongue.

"Sori linear, transverse, on lateral veins. *Involucre* double, occupying both sides of the sorus, opening, as it were, by a longitudinal suture. *Veins* forked."—*Br. Fl.*

1. *S. vulgare*, Sym. *Common Hart's-tongue*. "Fronds simple oblong-ligulate acute heart-shaped at the base, stipes scaly."—*Br. Fl.* p. 574. *E. B.* t. 1150.

β. Fronds bi- or tripartite at the extremity.

In moist shady woods, on hedgebanks, and in clefts of rocks; abundant.

Very fine in Undercliff. Shanklin.

β. By the roadside from Bonchurch to St. Boniface, near Dyer's cottage, *S Hailstone, jun., Esq.*!

Rhizoma thick, hard, fleshy and yellowish within, blackish without, and imbricated with the ascending bases of the present and former year's fronds, emitting copious long, blackish, flexuose and wiry fibres. *Fronds* mostly very numerous, firm in texture, evergreen, from about 12 to 20 inches or 2 feet in length and from $2\frac{1}{2}$ to 3 inches wide, at first erect, becoming gradually more horizontal, and forming at length dense spreading tufts, drooping or recurved at the summit, oblong-lanceolate, acute, mostly entire, sometimes 2-, 3- or many-cleft at the extremity, more or less cordate at base or even auriculate, the lobes meeting or nearly so, sometimes unequal, undulate on the margin, bright green above and shining finely rugoso-striate. *Stipes* dark brown or blackish, very variable in relative length to the frond, from one-tenth (*Newm.*) to full half that of the latter, terete, somewhat flattened above, clothed with pale brown, beautifully reticulated, chaffy, acute scales, that are very loosely adhering or attached. *Venation* obscurely marked, proceeding directly from the midrib of the frond and nearly at right angles to it, inclining a little forwards towards the apex, the primary veins forked near their origin and again at some indeterminate distance between that and the margin. *Sori* linear, central on either side between the margin and midrib of the frond, occupying the space between the outer branches of each vein or system of veins. *Indusium* (involucre, *Hook. &c*) whitish, bursting along its entire length by an often median suture, which in the earlier stages of the fructification is very indistinct and even obsolete. *Thecæ* dark brown and shining, stipitate, globose with a vertical elastic ring.

The fresh leaves of the Hart's-tongue are applied externally in rustic practice in the island to bad legs! (erysipelalous eruptions) as a cooling remedy.

VIII. *PTERIS*, *Linn.* Brake.

"*Sori* continuous, linear, marginal. *Involucres* formed of the reflexed margin of the frond, frequently dilated into a membrane, opening internally. *Veins* forked in the British species."—*Br. Fl.*

1. *P. aquilina*, *L.* Common Brake. "Fronds tripartite, branches bipinnate, pinnules linear-lanceolate superior undivided inferior pinnatifid, the segments oblong obtuse."—*Br. Fl.* p. 575. *E. B. t.* 1679.

On heaths and commons, in dry woods and bushy places; plentifully.

If the stem be divided transversely near the root, the section exhibits a fancied resemblance to a spread eagle, whence the trivial name. This figure is formed by bundles of longitudinal vessels in the centre of the stem.

IX. *BLECHNUM*, *Linn.* Hard-fern.

"*Sori* linear, longitudinal, contiguous, parallel one on each side of the rib. *Involucre* continuous, opening interiorly. *Veins* forked."—*Br. Fl.*

1. *B. boreale*, *Sw.* Northern Hard-fern. "Sterile fronds pectinato-pinnatifid, the segments lanceolate rather obtuse, fertile fronds pinnate, pinnæ linear acuminate."—*Br. Fl.* p. 575. *E. B. t.* 1159.

In damp woods and on moist shady hedgebanks, but not common.

E. Med.—In a wet thicket behind the fruit-garden at St. John's. On the skirts of Lake common, near Landguard farm, plentifully. In the lane between Guildford and Lynn farms, near Haven-street, sparingly. In the dell, &c., at Apse castle, abundantly. In and about the Wilderness, and on the moors N. of

Godshill in various places, 1843. Dripping well on St. George's down, *G. Kirkpatrick, Esq.*! [In a ditch on the left-hand side in Dame Anthony's wood, about midway, entering from Ryde, *T. Reynolds, Esq.*, Edrs.]

W. Med.—On Kingston moors, between Corve and Kingston, &c., 1843. [Moortown bog, Brighstone, *A. G. More, Esq.*, Edrs.]

Order XC. OSMUNDACEÆ, *R. Br.*

"*Capsules* clustered on the margin of a transformed frond, with an obscure ring, reticulated and pellucid, opening by two regular valves. *Fronde* circinate in æstivation."—*Br. Fl.*

I. OSMUNDA, *Linn.* Flowering-fern.

"*Capsules* subglobose, pedicellate, clustered, striated, half 2-valved. *Involucre* none. *Veins* forked."—*Br. Fl.*

1. *O. regalis*, *L.* *Common Osmund-royal. Flowering-fern. Vect. Snake-fern.* "*Fronde* bipinnate, pinnules oblong nearly entire the lower base somewhat auricled, the inferior ones opposite, fertile panicle bipinnate occupying the extremity of the frond."—*Br. Fl.* p. 578. *E. B. t.* 209.

In low boggy or swampy meadows and on wet commons, in many places.

E. Med.—Profusely in a large swampy wood, chiefly of salallows, close to Godshill, on the N.E. side of the village, called, I believe, Moor withy-bed, 1843. In great profusion on the peat-bog just beyond Munsley hill, about half a mile E. of Godshill (growing in large tufts), and in various places between Godshill and Buddbridge, on moist fences and ditchbanks, 1843. In wet thickets above Alverston mill and in Alverston lynch, common. In several places on and about Blackpan common, 1848. Forming magnificent tufts along the ditch that skirts the Wilderness on the Rookley side. On the skirts of Lake common, and the adjoining parts of Sandown level, frequent. In Sandown bay, sparingly, *Miss Lucas* and the *Rev. G. E. Smith*.

W. Med.—Very plentiful and luxuriant in boggy meadows at Cridmore, &c. Boggy places near Westover, Calbourne mill, &c., occasionally. In the wet thicket by the stream between Newbridge and Calbourne mill, 1844. Wet thicket at Woolverton, by Shorwell, 1845. Kingston moors, as between Corve and Kingston, 1842. Not unfrequent on slipped land W. of Blackgang chine. The moors,* Brixton, 1842. Marsh at Freshwater gate, sparingly.

The largest and most striking of our ferns, but of humble growth in the Isle of Wight, compared with the dimensions it is said to attain in the northern and western parts of Britain, rising in some places to nearly 12 feet, but with us seldom exceeding 4 or 5. In a young state, whilst the fronds are unrolling from their circinate involution, and for some time after, the whole plant is of a delicate fawn or Isabel-yellow colour, and covered with a webby substance easily removed with the finger.

* A considerable tract of willow-thicket, so called, by Brixton, a part of which village, contiguous to these willow and alder swamps or moors, is known by the name of Moor Town.

Order XCI. OPHIOGLOSSACEÆ, R. Br.

"*Capsules* arranged on the margin of a contracted frond, sessile, without reticulations or a ring, coriaceous, opaque. *Fronde* straight in æstivation."—*Br. Fl.*

I. BOTRYCHIUM, Sw. Moonwort.

"*Capsules* subglobose, sessile, clustered at the margin and on one side of a pinnated rachis, 1-celled, 2-valved, compressed, opening transversely. *Involucre* none. *Veins* forked."—*Br. Fl.*

1. *B. Lunaria*, Sw. *Common Moonwort*. "Frond pinnated solitary, pinnæ lunate or subflabelliform crenate."—*Br. Fl.* p. 578. *Osmunda*, L.: *E. B. t.* 318. *Newman, Br. Ferns*, p. 100.

On dry hilly pastures, also in shady woods; rare. *Fr.* June.

E. Med.—In rocky wooded ground under the cliff at East end, growing amongst dead leaves in the most shady recesses, 1841. In a damp meadow nearly facing Cliff farm, by Shanklin, in some plenty, *Miss Emily Sibley*, 1848!!! In a pasture-field near Nunwell farm, in which there is a pond, observed but sparingly, 1849, *Dr. Bell-Salter*!!! Near Nunwell, *Mr. Lawrence*.

Rhizoma small, not at all creeping, emitting one or two bundles of somewhat whorled, slightly branched, pale fibres. *Rachis* solitary, or rarely a second, from 2 or 3 to 6 inches high, erect or sometimes bent or inclining, rounded, smooth, succulent and solid (not hollow as stated by Francis, at least in my specimens, though filled with very loose cellular tissue), its lower very white portion partially cased with brown, membranous, torn sheaths: at about $\frac{1}{4}$ or $\frac{1}{3}$ of its height the rachis sends off a lateral, erect, decurrent and pinnated frond, of about 2 or 3 inches in length, bearing from 4 to 6 (3 to 8, *Neom.*) pairs of opposite or somewhat alternate pale green pinnules, of a rhomboidal or fan-shape figure, notched or wavy on their exterior margin, their inferior edge decurrent on the rachis, which thus appears winged. Beyond this barren frond the common rachis is produced in an erect position, and at its summit bears about an equal number of contracted simple or branched pinnules, incurved and carrying on their upper surface the globular marginal *theæ*, very like white mustard-seed in size and colour, 1-celled, bursting by a single transverse medial suture without any ring or indusium, and filled with copious minute, roundish, white seeds.

Sometimes the lower pinnules of the barren frond are partially fructiferous, of which I have an example in the specimens before me.

II. OPHIOGLOSSUM, Linn. Adder's-tongue.

"*Capsules* 1-celled, 2-valved, opening transversely, connate, forming a compact 2-ranked spike."—*Br. Fl.*

1. *O. vulgatum*, L. *Common Adder's-tongue*. "Spike cauline, frond ovate obtuse."—*Br. Fl.* p. 578. *E. B. t.* 108.

In moist meadows and pastures.

E. Med.—Damp clayey meadow betwixt Pigslegs and Smallbrook heath copes,

1849. Pasture-field near Nunwell farm, near a pond in the lower part of the field, in considerable quantity, 1849, *Dr. Bell-Salter !!!* Meadow at the foot of Bembridge down, in considerable abundance, 1846, *idem !!!* Sparingly in a meadow at Steephill, 1848, *Albert Hambrough, Esq. !!!* In a rough pasture between North Fairlee and Mount Misery, 1841, *G. Kirkpatrick, Esq. !* Pasture-field between Appuldurcombe and Godshill? 1843. Young fronds only, and therefore uncertain.

W. Med.—Near Blackgang chine, 1847, *Albert Hambrough, Esq. !* Near Farringford house, to the N.W., and at Easton marsh, Freshwater, 1849, *idem* in litt. Pasture-ground by Parkhurst forest, near Mark's Corner, also in Northwood park, by Cowes, in great plenty, *Miss Georgiana Kilderbee !* Abundant in several meadows between Thorley and Wilmingham farms, where it was pointed out to me by my friend the *Rev. James Penfold*, June, 1838.

This fern is regarded as common to Europe and America, but all the specimens I have seen from the latter country,* including a very extensive series in my possession collected in Chester County, Pennsylvania, differ from the European in the far greater prolongation of the stipes beyond the summit of the frond.

* In the American herbarium of Mr. Durand, of Philadelphia, are a number of specimens from Collins, without any locality, but presumed to be American, agreeing many of them with the European plant.

APPENDIX,*

BY THE
EDITORS.

RANUNCULUS, Linn. Crowfoot. *Vide supra*, p. 5.

1. *R. aquatilis*, Linn. *Water Crowfoot*. *V. s.*, p. 6.

β. trichophyllus (Godron). "No floating leaves, peduncles short, petals narrow 5—7 nerved distant deciduous, carpels rounded and laterally pointed at the end."
—*Bab. Man.* 3rd ed. p. 6.

Mr. A. G. More has shown us, by reference to our author's specimens, now in the herbarium at Kew, that the plant referred to in the text above (p. 6), under var. *γ.*, as *R. circinatus* of Smith, is not that plant, but the form now quoted.†

? 1b. *R. fluitans*, Lam. *River Crowfoot*. "Stem floating, leaves all submerged capillaceo-multifid, their segments very long and parallel, petals obovate much longer than the calyx, receptacle of the fruit hispid."—*Br. Fl.* p. 7. *E. B. S.* t. 2870.

"In deep water. 24. June, July."—*Br. Fl.*

"Isle of Wight," *Cybele Britannica*, vol. iii. p. 374.

Mr. Watson informs us (in litt.) that he gives this station on the authority of a list marked for his use by our lamented author many years ago. We believe it was done in error; but still we think it right to call the attention of botanists to this plant.

2b. *R. cœnosus*, Guss. *Mud Crowfoot*. "Stem creeping or floating, leaves roundish kidney-shaped with 3—5 notched lobes, petals oblong about twice longer than the calyx, receptacle of the fruit glabrous."—*Br. Fl.* p. 8. *R. Lenormandi*, *F. W. Schultz* : *E. B. S.* t. 2930.

"Shallow water. 24. *Fl.* June—August."—*Br. Fl.*

Mr. A. G. More has pointed out to us, from our author's specimens in the Kew herbarium, that the plant referred to above (p. 6), under the name of *R. hederaceus*, as growing between Lee and Blackpan, belongs to the present species. Possibly some of the other stations may belong to the same, but *R. hederaceus* is far the commoner plant of the two in the Isle of Wight.

* This is added to include such facts as have been brought to our notice while the work has been in the press.—*Edrs.*

† In a letter we have received from Mr. More, while these sheets are in the press, he observes:—"But there is a plant very like *R. Baudotii*, Godr., growing in the marsh-ditches near Brading harbour. Further observation may determine whether it be distinct or not from *R. aquatilis γ. subpeltatus*, Bab. It is my own suspicion that it is probably what has been called *confusus* in England."

VIOLA, Linn. Violet. *V. s.*, p. 51.

4. *V. canina*, L. Dog Violet. *V. s.*, p. 54.

β. minor. *V. s.*, p. 55. Abundantly on Ventnor, Wroxall and Bonchurch downs, May, 1855, Dr. Bell-Salter.

SAGINA, Linn. Pearlwort. *V. s.*, p. 66.

2b. *S. ciliata*, Fries. *Ciliated Pearlwort*. "Annual, stem erect or ascending, leaves aristate glabrous or fringed, 'petals none,' sepals of the fruit erect or close-pressed to the capsule, 2 outer ones mucronate or aristate."—*Br. Fl.* p. 62.

"Dry gravelly places. ☉. *Fl.* May—September."—*Br. Fl.*
Plentifully everywhere on St. Helens spit, A. G. More, Esq.

HYPERICUM, Linn. St. John's-wort. *V. s.* p. 86.

26. *H. dubium*, Leers. Stem more or less quadrangular, leaves elliptic ovate obtuse nearly destitute of pellucid dots copiously reticulated beneath with pellucid veins, sepals reflexed. *α.* Sepals elliptical quite entire.—*E. B. t.* 296.

β. Sepals oblong-lanceolate mucronulate obscurely denticulate. *H. maculatum*, Crantz.—*Br. Fl.* p. 80.

"Rather mountainous woods. 24. July, August."—*Br. Fl.*

β. Between Ninham and Languard farms, Sept. 1855, Joseph Woods, Esq.

EPILOBIUM, Linn. Willow-herb. *V. s.*, p. 169.

? 5b. *E. virgatum*, Fries. *Slender Willow-herb*. "Leaves lanceolate narrowing upwards sessile denticulate not decurrent, stem with two or four elevated lines, stigma undivided or slightly patent or 4-fid, seeds oblong obovate not pointed, scions filiform."—*Bab. Man.* p. 115.

"Deep ditches in peat-bogs. 24. *Fl.* July, August."—*Bab.*

A specimen of *Epilobium* gathered by Dr. T. Bell-Salter at Blackpan, some few years ago, was pronounced by Mr. Babington to be that of which we have quoted his description; and Mr. Joseph Woods, from the same locality in 1855, has obtained what he designates *E. obscurum*, which latter name he also applies to an *Epilobium*, closely resembling *E. tetragonum*, growing in a wet part of the garden at St. Johns, near the pond.

BUPLEURUM, Linn. Hare's-ear. *V. s.*, p. 203.

2. *B. tenuissimum*, Linn. *Slender Hare's-ear*. *V. s.*, p. 204.

By the ditch at Salterns, sparingly, Mr. W. Dimmick.

LAMIUM, Linn. Dead-nettle. *V. s.*, p. 385.

? 1b. *L. intermedium*, Fries. *Intermediate Dead-nettle*. "Leaves obtuse inciso-crenate, lower ones stalked reniform cordate, floral ones sessile rather crowded, teeth of the calyx subulate longer than the tube always spreading, tube of the corolla straight naked within, lateral lobes of the lower lip with a short tooth."—*Br. Fl.* p. 318. *E. B. S. t.* 2941.

"In waste and cultivated ground; very rare."—*Bromf.* "○. *Fl.* June—September."—*Br. Fl.*

"Gathered, May 27th, 1845, in some plenty on sandy hedgebanks in a lane betwixt Marvel wood and Whitecroft, near Newport.

"As it presents itself in this island, the plant bears most resemblance to *L. incisum*, but my specimens are far larger than those I possess of the latter, being eighteen inches or more in length. It also agrees with *L. incisum* in the size of the flowers, which are less exserted than in *L. amplexicaule*, to which, as to *L. purpureum*, it likewise has much resemblance. The uppermost or floral leaves are less crowded than in any of the other three, and in the size, form and depth of the serratures come much nearest to *L. amplexicaule*, but differ in being for the most part subcuneate at the base, or narrowed into an evident foot-stalk." "I should say that *L. intermedium* was a variety, and but a slight one, of *L. incisum*, and this latter but doubtfully distinct from *L. purpureum*."—*Bromfield in Phytol.* iii. p. 666, to which we refer for fuller notes on this plant, which our author had not inserted in the mss. notes of the Flora, which circumstance, together with our having overlooked the notice above quoted, is the cause of this plant not appearing in its proper place in the text.

ATRIPLEX, *Linn.* Orache. *V. s.*, p. 423.

2. *A. marina*, *Linn.* Marine Orache. *V. s.*, p. 424.

South shore of Brading harbour, *A. G. More, Esq.*

4. *A. erecta*, *Huds.* Upright Orache. *V. s.*, p. 425.

St. Helens and near Bembridge, common, *A. G. More, Esq.*

9. *A. laciniata*, *Smith.* *V. s.*, p. 426.

Bembridge spit, and the shingle at Foreland, very sparingly, *A. G. More, Esq.*

"The provincial area of this plant (*A. arenaria* of Woods) having been restricted to three in the 4th edition of 'London Catalogue,' it may be as well to mention that the species here meant is not *A. rosea*, *Bab.*, which is common enough, but the true *laciniata*."—*Id.* in litt.

POLYGONUM, *Linn.* Persicaria. *V. s.*, p. 431.

7. *P. Raii*, *Bab.* *Ray's Knot-grass.* *V. s.*, p. 434.

In plenty on St. Helens spit, especially by the old church ruins, *A. G. More, Esq.*

LASTREA, *Presl.* Shield-fern. *V. s.*, p. 630.

3. *L. Filix-mas*, *Presl.* Blunt Shield-fern. *V. s.*, p. 630.

γ. *erosa*. "Pinnules less crowded more elongated and narrower inciso-dentate. *Aspidium erosum*, *Schukr. Fil. ?*"—*Br. Fl.* p. 569.

In a shady copse near Bembridge, *A. G. More, Esq.*

By the above name Mr. More identified his specimens found sparingly in the locality cited, and Mr. Borrer corroborates this nomenclature. Mr. T. Moore of Chelsea, however, would name them as a distinct variety, under the name of *elongata*, their form being more attenuated than the ordinary state of his var. *incisa*, which is also found in the Isle of Wight.

INDEX

TO THE VILLAGES, FARMS, SEATS, WOODS, &c., MENTIONED IN THIS WORK
AS STATIONS FOR PLANTS; WITH THEIR BEARINGS AND DISTANCE FROM
THE NEAREST MARKET TOWN OR PLACE OF NOTE.*

The distances are given, as measured off upon the map, from point to point, excepting betwixt the principal towns and parochial villages, where they are noted by current computation along the high roads. The main object of this index being to facilitate the finding of places marked on the map which accompanies the work, rigid exactness in the several bearings and distances is not aimed at or required; a coincidence within half a point in the former case, and a quarter of a mile in the latter, being held a sufficiently close approximation to the truth for all practical purposes.

Abbreviations.—B. borough; Br. bridge; Ch. church†; E. M. East Medina; F. farm; Gr. great; H. hamlet‡; Hd. head; Ho. house, manorial residence or seat; Lit. little; m. mile; Pt. point; T. town, not corporate; V. village, containing the parish church; R. river; W. M. West. Medina.

A.	Afton Ho. 1½ m. S. by W. Yarmouth
Adgestone H. E. M. 1 m. S.W. by	Down. E. Freshwater Bay
W. Brading	Aldermoor F. E. M. 1½ m. S.W. by
Afton F. W. M. 2 m. S. Yarmouth	S. Ryde
	Heath. ½ m. E. Ald. F.

* The bearings are of course to be understood as taken with reference to the true or terrestrial meridian laid down on the map, not to the magnetic meridian of the island, which is constantly undergoing alteration.

† In measuring the distance of woods, headlands, bays, or of small inhabited places, as hamlets or farms, from the nearest town or village, the parish church (indicated in the map by a minute cross) has in nearly every instance been taken as a point of departure, because such places are in general too straggling or irregular to serve as a definite mark; nor would it be possible to fix on any centre from which to set out in laying down the intervals, excepting in one or two instances, as that of Newport for example, the outline of which town is sufficiently regular to give a middle point with tolerable exactness. Where the parish church stands apart from the place it takes its name from, its site is marked in the map, with the word Church added in full, in small Roman letters, and so written in the Topographical Index. In all other cases the position of the church is shown by the conventional sign of a cross only, and the abbreviation Ch. follows the name of the nearest place to the locality sought for in the Index. In measuring off woods, bays, downs, or other objects having an extended surface, the centre of their areas, as nearly as can be ascertained, has mostly been assumed as the radial terminus of the distance required.

‡ By the term Hamlet it is intended to designate any group or collection of

- Aldermoor Mill. S.W. by W. Ald. F.
 Alum Bay. W.M. 4 m. S.W. by W. Yarmouth
 Alverstone H. E. M. 1 m. E. Newchurch
 — Farm. E. by N. Alv.
 — Lynch. E. Alv. F.
 Alverton F. E. M. 1 m. S.E. by E. Whippingham
 Alvington F. W. M. 1½ m. W. by S. Newport
 America H. E. M. 1 m. N.W. Shanklin
 Apes Down. W. M. 1½ m. W. by S. Carisbrook
 Apley Ho. E. M. E. by S. Ryde
 Appey* Pools. [½ m. E. from] Cranmore F.
 Appleford F. E. M. 1½ m. W.S.W. Godshill
 — F. Upper. 2½ m. W.S.W. Godshill
 — Wilderness. (See Wilderness, the)
 Appuldurcombe Street. E. M. 2½ m. W. by S. Shanklin
 — Ho. and Park. W. App. St.
 Apsee Castle. E. M. 1 m. N.W. by W. Shanklin
 — Copse. W. M. 1 m. W. by S.W. Cowes
 — Farm. E. M. 1½ m. N.W. by W. Shanklin
 — (Lit.) F. ¾ m. N.W. by W. Shanklin
 — Heath. E. M. 1½ m. S. by E. Newchurch
 Arretton V. E. M. 4 m. S.E. Newport
 — Down. N. Arretton
 — F. W. Arretton Ch.
 Ash F. E. M. Whitwell Ch.
 — Lodge F. E. M. ½ m. E.S.E. Wootton Ch.
 Ashey H. E. M. 2½ m. S. by W. Ryde
 — Down (Sea Mark). 1½ m. N.E. by N. Newchurch
 — F. 1½ m. W.N.W. Brading
- Atherfield Green H. W. M. 1½ m. S.W. Kingston Ch.
 — F. ½ m. E.S.E. Ath. Gr.
 — Lit. ½ m. N.W. by N. Ath. Gr.
 Atherton. (See Arretton)
- B.
- Bagwich F. E. M. ¾ m. W.N.W. Godshill Ch.
 Bakerwood Copse. W. M.
 Bank End F. E. M. ½ m. W.S.W. Steephill Cas.
 Barkham's Copse. W. M. 1½ m. W.N.W. Gatcomb Ch.
 Barnfield Marsh. W. M. ½ m. S. Yarmouth
 Barnsley F. E. M. 1 m. W. by N. S. Helens Ch.
 Bartletts Common. E. M. N.E. Prestwood
 Barton F. E. M. ½ m. E. by S. Osborn Ho.
 — Wood. E. Barton F.
 Batchelors F. 1½ m. E. by N. Godshill Ch.
 Beacon Alley. E. M. ½ m. W.S.W. Godshill Ch.
 Beanacre F. E. M. 2½ m. N.W. by W. Brading Ch.
 Beaper F. E. M. 1½ m. N. Brading Ch.
 Beckett's Copse. W. M. ¼ m. E. Freshwater Ch.
 Beckfield Barn. W. M. ½ m. S.E. Kingston Ch.
 Belhan?
 Bembridge V. E. M.
 — Down. W. to S.S.W.
 Bembridge Island
 — Island. E. extremity Isle of Wight
 — Farm. 1½ m. S.S.W. Bembridge Pt.
 — Point. N.E. extremity Bembridge Isle
 Bere Lay. E. M. ¾ m. W. by N. Whitwell Ch.

houses or cottages, however small, which has received a name, and which could not be classed under that of Village, as Queen Bower (consisting of two families under the same roof), Five Houses, Carpenters, &c.

* [Happy Brook, situated as given above, is suggested to us, by Jonathan Worsley, Esq., as the place probably intended by our author. We are indebted to Mr. Worsley for the bracketed definition of localities which had been left blank by the author.—*Edrs.*]

- Berry F. E. M. $\frac{1}{4}$ m. S.W. by W. Godshill Ch.
 — Gate F.
 Berryl F. E. M. $\frac{1}{4}$ m. E. Whitwell Ch.
 Bigbury F. E. M. $1\frac{1}{4}$ m. S. by E. Newchurch Ch.
 Billingham Ho. W. M. $\frac{1}{2}$ m. N.E. by E. Kingston Ch.
 Binstead V. E. M. 1 m. W. by N. Ryde
 — Hill. $\frac{1}{2}$ m. S.S.W. Binstead Ch.
 — Lodge F. $\frac{3}{4}$ m. S.S.W. Binstead Ch.
 Birchfield. E. M. $1\frac{1}{2}$ m. S. by E. Newport
 Birchmore F. E. M. $2\frac{1}{2}$ m. S. by E. Newport
 — Lit. F. $\frac{1}{4}$ m. S.E. by E. Gr. Birchm.
 Black Bridge. W. M. $\frac{1}{2}$ m. S. Freshwater Ch.
 — E. M. 2 m. S.W. by S. Binsted Ch.
 Blackgang Chine. W. M. $\frac{1}{2}$ m. S. Chale Ch.
 Black Down. [See Bleak Down]
 Blacklands Copse. W. M. $\frac{1}{2}$ m. N.W. Northwood Ch.
 Black Pan F. E. M. $1\frac{1}{2}$ m. W.S.W. Sandown Fort
 — Common. 1 m. W. Sandown Fort
 Blackwater. E. M. 2 m. S. by E. Newport
 Blake F. W. M. $\frac{1}{2}$ m. N.E. by E. Brixton Ch.
 Blanketts F. E. M. 1 m. E.S.E. Whippingham Ch.
 Bleak Down. E. M. 1 m. W. Godshill
 Bloodstone Copse. E. M. $\frac{1}{2}$ m. E. by N. Ashey Down (Sea Mark)
 Bobberstone F. E. M. $1\frac{1}{2}$ m. E. by N. Godshill Ch.
 Bohemia Ho. E. M. $1\frac{1}{4}$ m. N.N.W. Godshill Ch.
 Bonchurch V. E. M. 1 m. E. by N. Ventnor
 Bordwood H. E. M. 1 m. S.E. Newchurch Ch.
 — F. 1 m. S.E. by E. Newchurch Ch.
- Bordwood Forest
 — Lower. (See Bordwood)
 — Upper. (See Bordwood)
 Borthwood. (See Bordwood)
 Bottle Hole Spring. W. M. 1 m. N.N.W. Brixton Ch.
 Bottom Copse. E. M.
 — W. M. 1 m. N. by E. Northwood Ch.
 Bottomground Copse. W. M.
 — Rew.* $1\frac{1}{4}$ m. E. by S. Calbourne Ch.
 Bowbridge. E. M. $\frac{1}{2}$ m. N.N.W. Godshill Ch.
 Bowcombe. (See Buccombe)
 Brading T. E. M. 4 m. S. by E. Ryde
 — Down. W. to S.S.W. Brading Farm
 Braggs Hill. 1 m. S.W. by W. Brading Ch.
 Brambles F. W. M. 1 m. W.N.W. Freshwater Ch.
 Branstion H. E. M. $1\frac{1}{4}$ m. S.S.W. Newchurch Ch.
 Breaches Copse. E. M.
 Bridge H. E. M. $\frac{1}{2}$ m. S.W. by W. Godshill Ch.
 — Court F. $\frac{1}{2}$ m. W.S.W. Godshill Ch.
 Brighstone. (See Brixton)
 Briddlesford Copse. 1 m. S. Wootton Br.
 — Farm (Gr.) $1\frac{1}{4}$ m. S. by W. Wootton Br.
 — Farm (Lit.) $1\frac{1}{4}$ m. S.W. by S. Wootton Br.
 — Heath. [On Great Briddlesford Farm]
 Brixton V. W. M. 2 m. W. Shorwell
 — Chine. (See Grange Chine)
 Broadfields F. W. M. $\frac{3}{4}$ m. S.S.W. W. Cowes Ch.
 Broad Lane. W. M. S. Thorley Street
 Brock's Copse, E. and W. E. M. $\frac{3}{4}$ m. W. to N.W. Wootton Ch.
 Brook V. W. M. 2 m. W. Mottes-ton Ch.
 — Chine. $\frac{1}{4}$ m. S.W. Brook
 — Church. $\frac{3}{4}$ m. N.W. by W. Mottes-ton Ch.
 — Green. $\frac{3}{4}$ m. S. Brook Ch.

* Rew is a provincial term for a patch of wood or copse of small extent, as also for a narrow belt of trees or brushwood, *quasi* a "row."

Brook House. $\frac{1}{2}$ m. S.W. by W.
Brook Ch.
Brooken End. (See Lane End)
Brookfield Ho. E. M. [1 m. W. Ryde]
Brookside F. W. M. N.W. by W.
Brixton
Buccombe H. W. M. $1\frac{1}{2}$ m. W.S.W.
Carisbrook Castle
—— Down. W. Buccombe
—— F. E. by S. Buccombe
Buckett's Copse. E. M. $1\frac{1}{2}$ m. N.E.
Whippingham Ch.
Buck's Barn F. W. M. $\frac{1}{2}$ m. N.W.
by W. Kingston Ch.
—— Heath. [1 m. S.E. Shorwell]
Budbridge Gr. F. E. M. 1 m. N. by
E. Godshill Ch.
—— Lit. F. $\frac{1}{2}$ m. N. by E. Gr.
Budbridge
Buddle F. E. M. $\frac{3}{4}$ m. S.S.W. Niton
Bugbury F. E. M. (See Bigbury)
Burnt House F. (?) E. M. $1\frac{1}{2}$ m. E.
by S. Newchurch Ch.

C.

Calbourne V. W. M. 2 m. S.S.E.
Shalfleet
—— Lodge. $\frac{1}{2}$ m. W. by N. Calbourne Ch.
—— Mill. $\frac{3}{4}$ m. W. by N. Calbourne Ch.
—— New Barn F. $\frac{1}{2}$ m. N.E. by E. Calbourne Ch.
—— Hummet. S. Calbourne New B.
Calving Close Copse. W. M. $\frac{1}{2}$ m. N.N.E. Northwood Ch.
Canada H. E. M. S. by E. Ryde
Carey's Sconce (Pt.) W. M. 1 m. W. by N. Yarmouth
Carisbrook V. W. M. 1 m. S.W. by W. Newport
—— Castle. $1\frac{1}{2}$ m. S.W. Newport
Carpenters H. E. M. $\frac{3}{4}$ m. S.S.W. St. Helens Ch.
Castle Mead. Old Castle Point
—— Point. E. M. $\frac{3}{4}$ m. S. by E. Niton
Centurion's Copse. E. M. 1 m. E.S.E. Brading Ch.
Chale V. W. M. 2 m. W.N.W. Niton
—— Farm. $\frac{1}{2}$ m. E.N.E. Chale Ch.
Chalk Close Coppice. W. M. $1\frac{1}{2}$ m. W. by S. Northwood Ch.

Champion. E. M. [$\frac{1}{2}$] m. E. Gatcomb Ch.
Chapel Corner Copse. E. M. 1 m. N.N.E. Wootton Br.
Charlton F. W. M. S. by E. Northwood Ch.
Cherrygin H. E. M. $1\frac{1}{2}$ m. N.W. by N. St. Helens Ch.
Cherry Wood Copse. E. M. $\frac{1}{2}$ m. N.N.E. Arretton Ch.
Chessel F. W. M. $\frac{3}{4}$ m. N. by E. Brook Ch.
Cheverton F. E. M. $1\frac{1}{2}$ m. S.S.E. Newchurch Ch.
—— W. M. 1 m. N. by E. Shorwell Ch.
—— Copse. [W. M. On Cheverton F.]
Chillerton H. W. M. $\frac{1}{2}$ m. S. by W. Gatcomb Ch.
—— Down. 1 m. S.W. Gatcomb Ch.
—— Farm. $1\frac{1}{2}$ m. N. Kingston Ch.
Chillingwood Gr. Copse. E. M. $1\frac{1}{2}$ m. N. Newchurch Ch.
—— Farm. 2 m. N. Newchurch Ch.
—— New Copse. N. Chillingwood Gr. Copse
Chilton Chine. W. M. 1 m. S. by E. Mottestone Ch.
—— Green H. W. M. 1 m. S.S.E. Mottestone Ch.
Chine. (See Blackgang, Brixton, Brook, Chilton, Cowleaze, Grange, Luccombe, Shanklin, Walpen, Whale
—— Cottage. E. M. [In Shanklin Chine]
—— Head. (See East End)
Churchill's F. W. M. $1\frac{1}{2}$ m. W. by N. Calbourne
Church Lane. E. M. E. side Quarrel Copse
Clamerkin's F. W. M. $1\frac{1}{2}$ m. E.N.E. Shalfleet Ch.
Clarken Lane. W. M. N.E. to S.E. by E. Carisbrook Castle
Clatterford F. W. M. $\frac{1}{2}$ m. W. Carisbrook Castle
Clavells Copse. E. M. $\frac{3}{4}$ m. E. Whippingham Ch.
Claybrook F. E. M. $1\frac{1}{2}$ m. S. Whippingham Ch.
Cleavland Copse. E. M. $\frac{3}{4}$ m. E. Appuldurcombe Ho.
Cliff F. E. M. $\frac{3}{4}$ m. N.W. by W. Shanklin Ch.

- Cliff's End Pt. W. M. N. end Colwell Bay
 Cockleton F. W. M. 1 m. S.S.W. W. Cowes Ch.
 — F. (Lower). $\frac{1}{4}$ m. W.S.W. Cockleton F.
 — W. M. 1 m. N.W. by W. Carisbrook Ch.
 Coleman's F. W. M. $2\frac{1}{2}$ m. N.W. by W. Carisbrook Castle
 Colwell H. W. M. [In the parish of Freshwater]
 — Barracks. [On Colwell Heath]
 — Heath. [In the parish of Freshwater]
 Comb F. W. M. $\frac{3}{4}$ m. N. Brixton Ch.
 Combley F. E. M. 1 m. N.E. by N. Arretton Ch.
 — Gr. Wood. N. Combley F.
 — Wood. N.E. by E. Combley F.
 Comptonfield F. W. M. 2 m. S. by W. Shorwell Ch.
 Compton Bay. W. M. S. Afton Down
 — Farm. $1\frac{1}{4}$ m. W.N.W. Brook Ch.
 — Grange. 1 m. W. Brook Ch.
 Cook's Castle. E. M. $1\frac{1}{4}$ m. W. Shanklin Ch.
 Cooper's H. E. M. [Between Bembridge Down and Bembridge F.]
 Coppid Hall (F.) E. M. $1\frac{1}{4}$ m. S.E. Wootton Bridge
 Copping's Bridge. E. Newport
 Copse Lane Copse. (See Hookhill Copse)
 Corve F. W. M. $\frac{3}{4}$ m. S. by W. Kingston Ch.
 Cothey Bottom Copse.* E. M. S.E. Westridge Ho.
 Cowes, East, T. E. M. 5 m. N. Newport
 — West, T. W. M. 5 m. N. Newport
 Cowleaze Chine. W. M. $1\frac{1}{4}$ m. S.S.E. Brixton Ch.
 Cowpit Cliff Wood. E. M. $\frac{1}{2}$ m. W. Shanklin Ch.
 Crab, Niton. (See Niton)
 Cranmore F. W. M. $1\frac{1}{2}$ m. E.N.E. Thorley Ch.
 Cridmore F. W. M. $1\frac{1}{4}$ m. E.N.E. Kingston Ch.
 Cripple's Path. E. M.
 Crocker's F. W. M. $\frac{3}{4}$ m. S.W. by W. Northwood Ch.
 Crook's Heath. E. M. $1\frac{1}{2}$ m. S. by W. Binsted Ch.
 Crossacres F. W. M. $1\frac{1}{4}$ m. S.W. by W. Freshwater Ch.
 Culver Cliff. E. M. N.E. end Sandown Bay
 D.
 Dallimore's F. W. M. [In the parish of Northwood]
 Dark Lane. W. M. (See Clarken Lane)
 — E. M. Ryde
 Dean F. E. M. $\frac{1}{2}$ m. S.E. Whitwell Ch.
 Debborn F. W. M. $\frac{3}{4}$ m. S.W. by W. W. Cowes Ch.
 — Turnpike. [Near W. Cowes]
 Dewcombe Copse. W. M. $1\frac{1}{4}$ m. W. to W. by S. Gatcombe Ch.
 Dew's Place. E. M. $\frac{3}{4}$ m. S. Godshill Ch.
 Dodner F. W. M. 1 m. N. by E. Newport
 Dog Kennel. W. M. 1 m. S.S.E. Thorley Ch.
 Dolcoppice F. W. M. $1\frac{1}{2}$ m. N.W. Whitwell Ch.
 Doltins F. W. M. $\frac{1}{4}$ m. W.S.W. W. Cowes Ch.
 Double Close Copse. W. M. $1\frac{1}{4}$ m. W.N.W. Northwood Ch.
 Dover (the). E. to E.N.E. Ryde
 Duke F. W. M. $1\frac{1}{2}$ m. W.N.W. Northwood Ch.
 Dungewood F. W. M. 1 m. W. by S. Kingston Ch.
 — Lit. $\frac{1}{4}$ m. W.S.W. Dungewood F.
 Dunnage Copse [See Dunning's Copse†]
 [Dunning's Copse. 1 m. S.E. by E. Newport]
 Dunnose (Hd.) E. M. S.W. end Sandown Bay
 Dunsbury F. W. M. $\frac{1}{2}$ m. W. by N. Brook Ch.
 Durton F. E. M. $1\frac{1}{4}$ m. N.W. Arretton Ch.
 Durtshot F. W. M. $1\frac{1}{4}$ m. S.W. Shorwell Ch.

* Cothey means low damp or rotten land, *H. Hearne, Esq.*† [It is presumed Dunning's Copse is intended.—*Edrs.*]

Duxmore F. (Gr.) E. M. $1\frac{1}{2}$ m. N.E.
by E. Arretton Ch.
——— (Lit.) $\frac{1}{2}$ m. E. by S. Gr.
Duxmore F.
Dyers. E. M. $\frac{1}{2}$ m. Newchurch Ch.

E.

Eades's F. W. M. $1\frac{1}{2}$ m. W.N.W.
Calbourn Ch.
Eaglehead Copse. E. M. $\frac{1}{2}$ m. E.
Ashey Down (Sea Mark)
East Dean (Ho.) E. M. N.E. Bon-
church Old Ch.
East End. E. M. N.E. Bonchurch
Old Ch.
Easton H. and F. W. M. $\frac{1}{2}$ m. S.S.W.
Freshwater Ch.
——— Marsh. (See Freshwater Gate)
Egypt Ho. W. M. $\frac{1}{2}$ m. W.N.W.
W. Cowes Ch.
——— Lit. $\frac{1}{2}$ m. E.S.E. Egypt Ho.
Ellyards F. E. M. $1\frac{1}{2}$ m. S.W. San-
down Fort
Elm F. W. M. $\frac{1}{2}$ m. S.E. Shalfleet Ch.
Elmsworth F. W. M. $1\frac{1}{2}$ m. N.E. by
E. Newtown Ch.
——— Saltern. $\frac{1}{2}$ m. N. by W.
Newtown Ch.

F.

Fairfield F. E. M. $1\frac{1}{2}$ m. N.W. by
N. Whitwell
Fairlee Ho. E. M. 1 m. N.E. New-
port
——— New F. $\frac{1}{2}$ m. S.E. Fairlee Ho.
Farringford Ho. W. M. 1 m. S.W.
Freshwater Ch.
Fattening Park F. E. M. 1 m. S.W.
by S. Wootton Ch. and W. Br.
——— Copse. $\frac{1}{2}$ m. W. Fattening
Park F.
Fern Goose Coppice. W. M. Fresh-
water
Fernhill Ho. E. M. $\frac{1}{2}$ m. S. Wootton
Ch.
Firestone Copse. E. M. $\frac{1}{2}$ m. S.E.
Wootton Bridge
Fishbourne. (See Fish Houses)
Fish Houses H. E. M. 1 m. W. by
N. Binstead Ch.
Five Houses H. W. M.
Fivens H. E. M. $\frac{1}{2}$ m. N.N.E. Cal-
bourne Ch.
Flatbrooks F. W. M. 1 m. E.S.E.
Shalfleet Ch.

Ford Mill. E. M. 1 m. N.N.W.
Whitwell Ch.
Foreland F. E. M. $\frac{1}{2}$ m. W. Fore-
land Pt.
——— Pt. Extreme E. point Isle of
Wight
Forest Side. W. M. 1 m. N.W. by
W. Carisbrook Ch.
French Mill. E. M. $1\frac{1}{2}$ m. E. Gods-
hill Ch.
Freshwater V. W. M. 4 m. S.S.W.
Yarmouth
——— Bay. (See Freshwater Gate)
——— Gate H. 1 m. S. Freshwater
Ch.
——— Ho. 1 m. S.S.W. Yarmouth
——— Isle. W. extremity Isle of
Wight
——— Mill. $\frac{1}{2}$ m. S.E. Freshwater
Ch.
Froghill F. E. M. 1 m. E. Godshill
Ch.
Frogland F. W. M. $\frac{1}{2}$ m. S.W. by
S. Carisbrook Castle
Frogwell. (See Froghill)
Frosthills. W. M. $\frac{1}{2}$ m. S.W. Caris-
brook Castle
Fulholding F. W. M. 1 m. E.S.E.
Shalfleet Ch.
Fullford F. E. M. 1 m. S. by E. Ar-
retton Ch.
Furzy Goldens. W. M. $\frac{1}{2}$ m. N.W.
Freshwater Ch.
——— Hurst [H.] W. M. $\frac{1}{2}$ m. N.W.
by W. Northwood Ch.

G.

Gallant's Lane. W. M. $\frac{1}{2}$ m. N.W.
to N.N.W. Gatcomb Ch.
Galleberry Down. W. M. $1\frac{1}{2}$ m.
E.S.E. Calbourne Ch.
Garrets H. E. M. $1\frac{1}{2}$ m. W. by N.
Arretton Ch.
Gatcombe V. W. M. 3 m. S. by W.
Newport, $1\frac{1}{2}$ m. S. Carisbrook
Castle
——— Ho. and Park. E. Gat-
comb
——— Mill. S.E. side Gatcomb
Park
——— New Barn (F.) $\frac{1}{2}$ m. W.
Gatcomb Ch.
Gatehouse F. E. M. $2\frac{1}{2}$ m. S. Bin-
stead Ch.
Gauson's Barn (F.) W. M. 1 m.
N.W. by W. Gatcomb Ch.

Gillmans. [In Arretton parish]
 Gladdices F. W. M. 1 m. S. Kingstons Ch.
 Godshall V. E. M. 6 m. S.S.E. Newport.
 Goldens F. W. M. $\frac{3}{4}$ m. W.S.W. Carisbrook Castle
 — See Furzy G.
 Gottens F. W. M. 1 m. N.N.E. Chale Ch.
 [Grange Chine. W. M. Between Grange F. and the shore]
 — F. $\frac{1}{2}$ m. S.W. Brixton Ch.
 Great Park F. W. M. $1\frac{1}{4}$ m. W. Carisbrook Ch.
 Great Rolles Copse. W. M. 2 m. W. Northwood Ch.
 Greatwood Copse. E. M. $\frac{1}{2}$ m. S.W. Shanklin Ch.
 Great Wood. W. M. $\frac{1}{4}$ m. S.E. by S. Swainston Ho.
 Green Lane H. E. M. $1\frac{1}{2}$ m. N.W. Brading Ch.
 Greenlid Hill. E. M. $\frac{1}{2}$ m. S. by E. Whitwell Ch.
 Grove (the) Ho. and F. $1\frac{1}{4}$ m. S.W. by W. Brading Ch.
 Gunville. W. M. $\frac{1}{2}$ m. N.W. by N. Carisbrook Ch.
 Gurnet Bay. W. M. $1\frac{1}{4}$ m. W. to W. by S. W. Cowes
 — F. $1\frac{1}{4}$ m. W.S.W. W. Cowes Ch.
 — Wood. [On Gurnet F.]

H.

Hale F. E. M. $1\frac{1}{4}$ m. W.S.W. Newchurch Ch.
 Half-moon Copse. E. M.
 Hampstead F. W. M. $1\frac{1}{2}$ m. N.W. Shalfleet Ch.
 — East. $\frac{1}{2}$ m. E.N.E.
 — Hampstead F.
 — Lower. 1 m. E. by S. Hampstead F.
 Hardhill F. W. M. 1 m. W. Northwood Ch.
 — 1 m. N.W. by W. Northwood Ch.
 Hardingshoot F. E. M. 1 m. N.W. Brading Ch.
 Harlingshute F. (See Hardingshoot)
 Hartsash. E. M. $\frac{1}{4}$ m. N.E. by N. Newchurch Ch.
 Hasely F. E. M. 1 m. W. by N. Newchurch Ch.

Haslett F. W. M. $\frac{1}{4}$ m. S.S.E. Shorwell Ch.
 Hatchet Close Wood. E. M. $\frac{1}{4}$ m. W. Shanklin Ch.
 Hatherwood Point. W. M. N. Pt. Alum Bay
 Haven Street [V.] E. M. $1\frac{1}{4}$ m. S.W. by S. Binstead Ch.
 Hayland F. E. M. 1 m. S. by E. Binstead Ch.
 Head Down. E. M.
 Headen Hill. W. M. N.E. Alum Bay
 Heath F. E. M. $1\frac{1}{2}$ m. E.N.E. Newport
 Heathfield F. [E. M. $\frac{1}{4}$ m. S.S.E. Whippingham Ch.
 Hebberds F. W. M. 1 m. E. Shalfleet Ch.
 Hedge Corner. W. M. $\frac{1}{4}$ m. N. by W. Newport
 Hermitage (the). E. M. $1\frac{1}{4}$ N.E. by E. Chale Ch.
 Hide F. E. M. $\frac{1}{4}$ m. N. Shanklin Ch.
 — Lower. [Between Newchurch and Shanklin]
 High Down. W. M. W. Freshwater Gate
 High Wood. W. M. $\frac{1}{2}$ m. S. by E. Swainston Ho.
 Hill Copse. [W. M. 1 m. N.W. Freshwater Ch.]
 — F. E. M. 1 m. S.W. St. Helens Ch.
 — 1 m. W. St. Helens Ch.
 — F. W. M. $\frac{1}{2}$ m. E. Thorley Ch.
 — F. 1 m. N.W. by N. Freshwater Ch.
 — Heath. [W. M. [Near Hill Copse]
 — Way. E. M. [1 m. S.S.W. Bembridge Ch.]
 Hillis F. W. M. $1\frac{1}{2}$ m. W. by N. Northwood Ch.
 Honey Hill. [$\frac{1}{2}$ m. N. Newport]
 Honeypot Mead. (See Mill Green)
 Holbrooks. E. M. $1\frac{1}{4}$ m. N.W. by W. Whitwell Ch.
 Homewood H. E. M. $\frac{1}{2}$ m. S. Ryde
 Hookhill. W. M. $\frac{1}{4}$ m. S.W. by W. Freshwater Ch.
 — Copse. W. M. $\frac{1}{4}$ m. W. by S. Freshwater Ch.
 Hornhill Copse. W. M. $1\frac{1}{4}$ m. W.S.W. W. Cowes Ch.
 Horringford Bridge. E. M. 1 m. S.E. by S. Arretton Ch.

Horringford Farm. S.E. Horrington
Bridge
—— Withy-bed. $\frac{1}{2}$ m. E. to
S.E. Horrington Br.
How Gate F. E. M. $\frac{1}{4}$ m. S. by E.
Bembridge Ch.
Hoxall H. W. M. $\frac{1}{2}$ m. S.S.E. Mot-
tistone Ch.
Hulverstone H. W. M. $\frac{1}{2}$ m. W.N.W.
Mottistone Ch.
Hungerberry Copse. E. M. $\frac{1}{2}$ m.
N.W. by W. Shanklin Ch.
Hunger Hill Heath. E. M. 2 m. E.
by S. Ryde
Huntwithy Copse. W. M. 1 m. N.
Northwood Ch.
Hurstake [F.] W. M. $\frac{1}{4}$ m. N. by
E. Newport

I J

Idlecombe F. W. M. $1\frac{1}{2}$ m. S.W. by
W. Carisbrook Castle
Inwards Copse. E. M. 2 m. W.N.W.
Brading Ch.
Jobson's F. E. M. [In Niton parish]

K.

Kaccess F. W. M. $1\frac{1}{2}$ m. W. by S.
Carisbrook Castle
Kempfill F. E. M. $1\frac{1}{2}$ m. S. Bin-
stead Ch.
Kennerley F. (Gr.) E. M. $1\frac{1}{2}$ m. N.
Godshill Ch.
—— F. (Lit.) S. Great Kenner-
ley
—— Heath. $\frac{2}{3}$ m. W. Gr. and
Lit. Kennerley Fs.
Kerne F. E. M. $1\frac{1}{2}$ m. N.E. by E.
Newchurch Ch.
King's (the) Forest. (See Parkhurst)
Kingsgate F. E. M. $\frac{1}{2}$ m. W. by N.
Whitwell Ch.
King's Quay. E. M. $\frac{1}{2}$ m. N. by W.
Wootton Ch.
—— Copse. W. side King's
Quay Creek

Kingston V. W. M. 2 m. S.E. Shor-
well
—— Copse. W. Kingston
—— F. W. M.
—— E. M. $\frac{1}{2}$ m. N.E. by E.
Whippingham Ch.
Kitbridge. W. M. [$\frac{1}{2}$ m. N. by W.
Newport]
Kite Hill Ho. and F. E. M. E.
Wootton Bridge
Knighton F. E. M. $\frac{1}{2}$ m. N.N.E.
Newchurch Ch.
—— Ho. 1 m. N.N.E. New-
church Ch.
—— E. Copse. $\frac{1}{2}$ m. E. by N.
Knighton Ho.
—— W. Copse. $\frac{1}{2}$ m. W. by N.
Knighton Ho.
Knowle F. E. M. 1 m. S.W. by S.
Niton Ch.
Knowles F. E. M. $\frac{1}{2}$ m. S.W. by S.
Bembridge Ch.

L.

Lake H. E. M. $1\frac{1}{2}$ m. S.W. by W.
Sandown Fort
—— F. W. M. 1 m. S. Carisbrook
Castle
Lambseaze F. W. M. $1\frac{1}{2}$ m. E. by
N. Newtown Ch.
—— Copse. E. M. $\frac{1}{2}$ m.
N.N.E. Wootton Bridge
Landguard F. E. M. $1\frac{1}{2}$ m. N.
Shanklin Ch.
Lane End. E. M. $\frac{1}{2}$ m. E. Bem-
bridge Ch.
Lang Bridge H. E. M. N. end
Newchurch
Lashmere Pond. E. M. $1\frac{1}{2}$ m. W.S.W.
Godshill Ch.*
Lechmere Pond. (See Lashmere)
Lee F. E. M. $1\frac{1}{2}$ m. S.E. New-
church Ch.
—— F. W. M. 1 m. E.S.E. Thorley
Ch.
—— Copse. $\frac{1}{2}$ m. N. Lee F.
Lemerston H. W. M. $\frac{1}{2}$ m. E. Brix-
ton Ch.

* Lashmere Pool, formerly of greater extent, when the adjacent portion of Bleak Down was unenclosed, is noted for producing leeches of very large size, though less abundant now than they used to be. I have myself seen them there, and was assured by a medical man at Newport of the great superiority of these leeches over those now so largely imported from the Continent. The present name is stated to be a corruption of Leechmoor or Leechmere from this circumstance, and perhaps Lachmere may have the same meaning.

Lemerston Down. 1 m. N.E. to N.N.W. Lemerston
 Lenten Pit. W. M.
 Lessland F. E. M. 1 m. N.E. by E. Godshill Ch.
 Lewin's Copse. W. M. Freshwater
 Lawkley (the) Stream. W. M.
 Little Park F. W. M. $1\frac{1}{2}$ m. W. Carisbrook Castle
 Little Town H. E. M. 1 m. S.W. by S. Wootton Bridge
 Lock's F. W. M. $1\frac{1}{2}$ m. E. Newtown Ch.
 Lodge Copse. E. M. $\frac{3}{4}$ m. N.E. by N. to N.N.W. Wootton Ch.
 London Heath. W. M.
 Long Copse. W. M. 1 m. S.W. by W. Gatcomb Ch.
 — Down F. E. M. $1\frac{1}{4}$ m. W.S.W. Arretton Ch.
 — Land F. $\frac{1}{4}$ m. E.N.E. Yaverland Ch.
 — Lane. $1\frac{1}{2}$ m. N.N.W. Arretton Ch.
 — Phillis Copse. $1\frac{3}{4}$ m. N.N.E. Newchurch Ch.
 — Stone (the). W. M. $\frac{1}{2}$ m. N.N.E. Mottestone Ch.
 Lorden Copse. W. M. $\frac{1}{2}$ m. N.E. to N.N.E. Shorwell Ch.
 Love Lane. W. M.
 — (See Clarken Lane)
 Loverston F. W. M. $\frac{1}{4}$ m. S. Gatcomb Ch.
 Luccomb H. E. M. $\frac{3}{4}$ m. S. Shanklin Ch.
 — Chine. E. Luccomb
 — Copse. $\frac{1}{4}$ m. S.W. Luccomb F.
 — F. $\frac{1}{4}$ m. S. by W. Shanklin Ch.
 — Landlip (See East End)
 Luckets F. W. M. 1 m. E. by N. Thorley Ch.
 Lushington Copse. E. M. $\frac{1}{2}$ m. S.W. by W. Wootton Ch.
 Luton F. W. M. $\frac{1}{2}$ m. W. Northwood Ch.

M.

Main R. (See Yar E.)
 Mark's Corner H. W. M. $1\frac{1}{2}$ m. W.S.W. Northwood Ch.

Marshecombe Copse.* E. M. $\frac{1}{4}$ m. N.W. by W. to S.W. by W. Yaverland Ch.
 Marsh Green H. W. M. $\frac{1}{2}$ m. S. by W. Brixton Ch.
 Marvell F. W. M. 1 m. S.E. by E. Carisbrook Castle
 — Wood. S. to W. Marvell F.
 Medham F. $\frac{1}{2}$ m. N. by E. Northwood Ch.
 — Brickfield
 Medina R. [Flows nearly the entire distance from St. H. through the island]
 — Mill. (E.) E. M. 1 m. S. by W. Whippingham Ch.
 — (W.) W. M. 1 m. S.E. by S. Northwood Ch.
 Merry Garden F. E. M. $1\frac{1}{4}$ m. S.W. by W. Sandown Fort
 Mersley. (See Messley)
 Merston H. E. M. 1 m. S.W. to S.S.W. Arretton Ch.
 — F. N.W. end Merston
 Messley H. E. M. 1 m. N.N.W. Newchurch Ch.
 — Down. N. Messley
 Middleton Green H. W. M. 1 m. S.W. by W. Freshwater Ch.
 Mill Green. W. M. $\frac{1}{4}$ m. S. Shalfleet Ch.
 Mirables (Ho.) E. M. $\frac{1}{4}$ m. S.E. Niton Ch.
 Monckton Mead. E. M. S.E. Ryde
 — Copse. [Adjoining Monckton Mead]
 Mornhill F. E. M. $1\frac{1}{4}$ m. E.S.E. Newport
 Moor F. E. M. $\frac{1}{2}$ m. N.E. by N. Godshill Ch.
 — W. M. $\frac{1}{2}$ m. S.S.E. W. Cowes Ch.
 Moor Town H. W. M. N.W. end Brixton
 More Green H. W. M. $\frac{1}{4}$ m. N.N.W. Freshwater Ch.
 Morton F. (Up.) E. M. $\frac{1}{4}$ m. S.S.W. Brading Ch.
 — (Low.) $\frac{1}{4}$ m. S. Up. Morton
 Mottestone V. W. M. 2 m. W.N.W. Brixton
 — Down. $\frac{1}{2}$ m. N. Mottestone
 — Mill. 1 m. E. Mottestone Ch.

* Pronounced Mashcombe by the country people.

Mount Cleves Ho. E. M. $\frac{1}{2}$ m. S.W.
by S. Niton Ch.
Mountjoy. E. M. $\frac{1}{2}$ m. E. by N. Carisbrook Castle
Mount Misery. E. M. $1\frac{1}{2}$ m. S.S.E.
Whippingham Ch.
Mousehole. E. M. [Probably Mouse Hill, near Fernhill]
Mud Lane. E. M. [Bembridge: a lane leading from Hillway to the shore]
Muggleton F. W. M. 1 m. E.S.E.
Brixton Ch.
Munsley Hill. E. M. N.E. Godshell

N.

Needles Hotel. W. M. 1 m. E. by N. Alum Bay
—— Light Ho. E. Scratchalls Bay
Nettlecombe F. E. M. $\frac{1}{2}$ m. N.E.
Whitwell Ch.
Nettleston Green H. E. M. $\frac{1}{2}$ m. N.
St. Helens Ch.
—— Point. $1\frac{1}{2}$ m. N. by E. St. Helens Ch.
Newbarn. (See Calbourn, Gatcomb, Osborne)
—— Hummet. S. by E. Calbourn New Barn
Newbridge H. W. M. 1 m. S.S.W.
Shalfleet Ch.
Newchurch V. E. M. 6 m. S.S.W.
Ryde
—— Lynch. (See Parsonage L.)
New Cross. W. M.
Newnham. (See Ninham*)
New Park F. W. M. $1\frac{1}{2}$ m. W.N.W.
Carisbrook Castle
Newport B. W. M. 5 m. S. E. and W. Cowes
Newtown V. W. M. 1 m. N.E. by N. Shalfleet
Ningwood H. W. M. 1 m. W. Shalfleet Ch.
—— F. $\frac{1}{2}$ m. S. Ningwood
—— Green F. $\frac{1}{2}$ m. S.S.E. Ningwood
Ninham F. E. M. $1\frac{1}{2}$ m. N.N.W.
Shanklin Ch.
—— 1 m. S.W. by S. Binstead Ch.

Ninham Hill. [Contiguous to Ninham F.]
Niton V. E. M. 9 m. S. Newport, 1 m. S.W. by W. Whitwell Ch.
—— Down. (See Head Down)
Nodes F. W. M. $\frac{1}{2}$ m. N.N.W.
Northwood Ch.
Nodeshill F. W. M. $\frac{1}{2}$ m. [N. Northwood]
Noke F. W. M. $\frac{1}{2}$ m. S.S.W. Northwood Ch.
Norris Castle. E. M. $\frac{1}{2}$ m. E.N.E.
E. Cowes Ch.
Northclose F. W. M. $1\frac{1}{2}$ m. N.E. by N. Newtown Ch.
North Court (Ho.) W. M. N.W.
Shorwell
North Ground F. W. M. 1 m. S.E.
by S. Kingston Ch.
Northlands Copse. E. M. $\frac{1}{2}$ m. E.
to N.E. Yaverland Ch.
North Park F. W. M. $1\frac{1}{2}$ m. N.E.
by N. Calbourn Ch.
Northwood Ch. W. M. $2\frac{1}{2}$ m. N.
Newport
Northwood Ho. and Park. W. M.
W. W. Cowes
Norton H. W. M. $1\frac{1}{2}$ m. N. Freshwater Ch.
Nullenswood. (See Nunswood Copse)
Nunswood Copse. W. M. $\frac{1}{2}$ m. W.
to W.N.W. Shalfleet Ch.
Nunwell (Ho.) E. M. $\frac{1}{2}$ m. W. by N. Brading Ch.
—— Lit F. $\frac{1}{2}$ m. N.W. Nunwell Ho.

O.

Oakfield H. E. M. S.E. by S. Ryde
Old Church Sea Mark. E. M. $\frac{1}{2}$ m.
E.S.E. St. Helens Ch.
Old Park (Ho.) E. M. $\frac{1}{2}$ m. S.W.
by W. St. Lawrence's Ch.
Osborne Ho. and Park. E. M. $\frac{1}{2}$ m.
N.N.E. Whippingham Ch.
—— Copse. (See Shepherd's Copse)
—— New Barn (F.) $\frac{1}{2}$ m. N. by W. Osborne Ho.

* Which is merely a corruption of Newnham, the proper spelling and pronunciation, though custom has sanctioned the less correct orthography.

P.

- Padmore [H.] E. M. $\frac{1}{4}$ m. E.S.E.
Whippingham Ch.
Pagham F. E. M. $1\frac{1}{2}$ m. N. by W.
Godshill Ch.
Pallance F. W. M. $\frac{3}{4}$ m. W. North-
wood Ch.
—— Gate. [Contiguous to Pal-
lance F.]
Palmer's F. E. M. $\frac{1}{4}$ m. W. by S.
Wootton Ch.
—— Brook H. $\frac{3}{4}$ m. S.W. Pal-
mer's F.
—— Copse. E. by N. to N.E. by
N. Palmer's Brook
Pan F. E. M. $\frac{1}{2}$ m. S.E. by E. New-
port
—— Lit. $\frac{1}{2}$ m. S.E. by E. Pan
F.
—— Moor. S.E. Newport
Pangbourne F. E. M. $1\frac{1}{2}$ m. S.W.
by S. Newchurch Ch.
Park F. E. M. $\frac{1}{2}$ m. W. by N. St.
Helens Ch.
—— $\frac{1}{2}$ m. S.E. by E. Godshill
Ch.
—— Cross. W. M. $1\frac{1}{2}$ m. W. by N.
Carisbrook Castle
—— Green. S.W. corner Parkhurst
Forest
Parkhurst Forest. W. M. 2 m. W.
to N.N.W. Newport
Park Lodge F. E. M. $\frac{1}{2}$ m. N. Woot-
ton Ch.
Parsonage Lynch (Wood). E. M. E.
by N. Newchurch Ch.
Paxfield H. E. M. [$\frac{1}{2}$ m. W. Fern-
hill]
Peacock Hill. E. M. [In Bembridge
parish, 1 m. S.W. Bembridge Ch.]
Peartree F. E. M. $1\frac{1}{2}$ m. E. Gods-
hill Ch.
Pelham Fields. E. M. N.E. Ryde
—— Woods. E.N.E. St. Lawrence
Ch.
Pennyfeathers F. E. M. 1 m. S.
Ryde
Perretton F. E. M. $\frac{3}{4}$ m. S. Arretton
Ch.
Pidford H. E. M. $\frac{3}{4}$ m. E.S.E. Gat-
combe Ch.
Pigslegs Copse. E. M. (See Rose-
mary Lane)
Pile F. W. M. 1 m. N.N.W. Chale
Ch.

- Pitt Place F. W. M. $\frac{1}{2}$ m. E.S.E.
Mottestone Ch.
Place F. W. M.
Plash F. W. M. $\frac{3}{4}$ m. S.W. by W.
Carisbrook Castle
Play Street F. E. M. $\frac{1}{4}$ m. S.W.
Ryde
Pondwell (Ho.) E. M. 1 m. N.W.
by N. St. Helens Ch.
Porchfield F. W. M. $1\frac{3}{4}$ m. E. by N.
Newtown Ch.
Pound F. E. M. $\frac{1}{4}$ m. S. Ryde
—— Green. W. M. $\frac{1}{2}$ m. S.W.
Freshwater Ch.
Preston F. E. M. $\frac{3}{4}$ m. S.S.E. Ryde
Prestwood H. E. M. $1\frac{1}{2}$ m. S. by E.
Ryde
Princeslade. (See Princelet)
Princelet F. E. M. $1\frac{1}{2}$ m. S. by W.
Newchurch Ch.
—— Shoot. $\frac{1}{2}$ m. Princelet F.
Priory (the) Ho. E. M. $\frac{1}{2}$ m. E.N.E.
St. Helens Ch.
—— F. [By Priory Ho.]
Puck. E. M. $\frac{1}{2}$ m. S. by E. New-
church Ch.
Puckaster (Ho.) E. M. $\frac{3}{4}$ m. S. by
E. Niton Ch.
—— Cove. $\frac{3}{4}$ m. S. Niton Ch.
Pucketts Copse. E. M. 1 m. S.W.
to S.W. by W. Binstead Ch.

Q.

- Quarr Abbey and F. E. M. $\frac{1}{2}$ m. W.
Binstead Ch.
—— Copse. Between Quarr Abbey
and Binstead Ch.
Quarrel's Copse. E. M. 1 m. S.S.W.
to S.W. by S. Wootton Ch.
Queen Bower H. E. M. $\frac{3}{4}$ m. S.E.
Newchurch Ch.

R.

- Ramsdown F. W. M. 1 m. N. by E.
Kingston Ch.
Rancombe Lane. W. M. [In the
parish of Shorwell]
Red Cliff. E. M. 1 m. E.N.E. San-
down Fort
Redhill F. E. M. [2 m. N. Niton]
—— $1\frac{1}{2}$ m. S.E. by S. Godshill
Ch.
Redway F. E. M. $1\frac{1}{2}$ m. S. Arretton
Ch.

Rew Down. E. M.*

— F. $1\frac{1}{2}$ m. N.E. by N. St. Lawrence Ch.

— Street F. W. M. $1\frac{1}{2}$ m. W.N.W. Northwood Ch.

Rickhouse Hill F. E. M. $\frac{1}{2}$ m. N.W. by N. Brading Ch.

Ridge F. W. M. $\frac{1}{2}$ m. S.W. by W. Northwood Ch.

— Copse. $\frac{1}{2}$ m. W. Ridge F.

Rill F. Up. E. M. $1\frac{1}{2}$ m. N.W. by W. Shanklin Ch.

— Low. [W. M. 1 m. S. Gatcombe Ch.

— Lane. [W. M. 1 m. S. Gatcombe Ch.]

Rock. W. M. $\frac{3}{4}$ m. N. by W. Brixton Ch.

Rocken End (Pt.) 1 m. S.W. Niton Ch.

Rodgeland F. W. M. $2\frac{1}{2}$ m. E. Newtown Ch.

Rodhill F. E. M. (See Redhill)

Rockley H. E. M. $1\frac{1}{4}$ m. S.E. Gatcombe Ch.

— F. $1\frac{1}{2}$ m. S.E. by S. Gatcombe Ch.

— Moors. W. Rookley F.

Rose Cliff Cottage. E. M.

Rosehall Green. W. M. (See Main Bench)

Rosemary Copse. E. M. S.E. end Rosemary Lane

— Lane. 1 m. S.S.W. Ryde

Rossland H. W. M. 1 m. N.E. by E. Kingston Ch.

Roude H. E. M. $1\frac{1}{4}$ m. S.W. by S. Godshill Ch.

Roughborough F. E. M. $\frac{3}{4}$ m. N. by W. Brading Ch.

— W. M. $1\frac{1}{4}$ m. N. by E. Shorwell Ch.

— Down. W. Roughborough F.

Round Phillis Copse. E. M. S.E. Long Phillis Copse

Rowlands F. E. M. $1\frac{1}{4}$ m. N. by E. Newchurch Ch.

Rowledge F. W. M. $1\frac{1}{4}$ m. E. by S. Calbourn Ch.

Rowridge. (See Rowledge)

Royal Heath. E. M. $\frac{1}{2}$ m. S.W. by W. Sandown Fort

RYDE T. E. M. 8 m. E. by N. Newport

Ryde Bank F. E. M. $\frac{3}{4}$ m. S.S.W. Binstead Ch.

S.

St. Boniface Cottage and Down. N. Bonchurch

St. Catherine's Down. E. W. M. Light Ho. (Old). E.

— M. Pt. E. M. S. extremity Isle of Wight

— Tower (Light Ho.) (New). St. Catherine's Pt.

St. Clare (Ho.) E. M. $1\frac{1}{2}$ m. N.W. by N. St. Helens Ch.

St. George's Down. E. M. 1 m. W. Arreton Ch.

St. Helens V. E. M. (See St. Helens Green)

— Church. $1\frac{1}{2}$ m. N.W. Bembridge Ch.

— Green. $\frac{1}{2}$ m. S.E. to S. St. Helens Ch.

— Old Ch. (Sea Mark) $\frac{3}{4}$ m. E.S.E. St. Helens Ch.

— Spit. N.E. (entrance) Brading Harbour

St. John's (Ho.) E. M. $\frac{1}{4}$ m. S.E. by E. Ryde

— Wood. $\frac{3}{4}$ S.E. Ryde

St. Lawrence V. E. M. 10 m. S. by E. Newport, $1\frac{1}{4}$ m. S.E. by E. Whitwell Ch.

St. Thewin's Copse. (See Centurion's Copse)

Salisbury F. W. M. $\frac{3}{4}$ m. S.E. Newtown Ch.

Saltern. E. M. $1\frac{1}{4}$ m. N. by W. St. Helens Ch.

— Copse. W. M. 1 m. N. by E. Freshwater Ch.

Sandford H. E. M. 1 m. E. Godshill Ch.

Sandham. (See Sandown)

Sandown H. E. M. 1 m. S.W. to W.S.W. Yaverland Ch.

— Bay. S.E. side Isle of Wight

— Fort. 1 m. S.W. by S. Yaverland Ch.

— Level. N. Sandown Fort

Sandway H. W. M. 1 m. N.E. by N. Gatcombe Ch.

* Rew (*quasi* Row) is a vernacular term for a hedgerow, and is also applied to a narrow strip or belt of wood or coppice.

- Sandy Bank H. W. M. $\frac{1}{4}$ m. S.
 Shorwell Ch.
 — Way H. W. M. $\frac{1}{2}$ m. S. by
 E. Shorwell Ch.
 Saynham F. E. M. $\frac{1}{2}$ m. S. Godshill
 Ch.
 Schoolhouse Green H. W. M.
 Scouts Gate. W. M. $\frac{3}{4}$ m. S. by W.
 Northwood Ch.
 Shalcombe D. W. M. W. to S.W.
 Shalcombe F.
 — F. $\frac{3}{4}$ m. N. by E. Brook
 Ch.
 Shalfleet V. W. M. 6 m. W. New-
 port, 1 m. S.W. by S. Newtown
 Ch.
 Shambler's F. E. M. W. Osborne
 Park
 — Copse. W. M. 1 m. S.
 West Cowes
 Shanklin V. E. M. 1 m. S. by W.
 Ryde
 — Chine. E. Shanklin
 — Church. $\frac{1}{2}$ m. S.W. by W.
 Shanklin Chine
 — Down. S.W. Shanklin
 — F. N.E. Shanklin Ch.
 Sheat F. W. M. $\frac{1}{2}$ m. S. by E. Gat-
 combe Ch.
 Sheepwash F. E. M. 1 m. S. by W.
 Godshill Ch.
 — W. M.
 Shepherd's Copse. E. M. $1\frac{1}{4}$ m. E.
 East Cowes
 — Lane. E. M. $\frac{3}{4}$ m. E.S.E.
 Arreton Ch.
 Shide H. W. M. (See Shide Br.)
 — Br. $\frac{3}{4}$ m. S.S.E. Newport
 — Chalk-pit. E. M.
 — Cottage. E. M. $\frac{1}{4}$ m. S.S.E.
 Shide Br.
 — Mill. E. M.
 Shorwell V. W. M. 2 m. E. Brix-
 ton
 Sibden Hill. Shanklin
 Sibbetts. [W. M. ?]
 Skinner's F. E. M. $1\frac{1}{2}$ m. S.W. Ar-
 reton Ch.
 — Hill. $\frac{1}{4}$ m. S. by E. New-
 church
 — Grove F. W. M. 1 m. W.
 by N. Northwood Ch.
 Slatwood Ho. E. M. [At E. Cowes
 on the N. side]
 Slucombe Copse. W. M. $1\frac{1}{4}$ m. N.
 Shorwell Ch.
 Smallbrook F. E. M. 1 m. S. Ryde
 — (Lit.) $\frac{1}{4}$ m. N.N.W.
 Smallbrook F.
 Smallbrook Heath Copse. W. Small-
 brook F.
 Smallgains F. E. M. $1\frac{1}{4}$ m. E.N.E.
 Newport
 Smallmoor F. W. M. $\frac{3}{4}$ m. S. by E.
 Shorwell
 Snowdrop Lane. W. M. W. Gat-
 comb Park
 Somerton F. W. M. $\frac{3}{4}$ m. N. North-
 wood Ch.
 South Ford F. E. M. $\frac{3}{4}$ m. N. Whit-
 well Ch.
 Southmore. W. M. $\frac{3}{4}$ m. S.S.W.
 Motteston Ch.
 Span F. E. M. $\frac{1}{2}$ m. S.S.E. Appul-
 durcombe Ho.
 — (Lit.) $\frac{1}{2}$ m. S. Span F.
 Spicers F. E. M. 1 m. S.W. by W.
 Newchurch Ch.
 Spreats Copse. E. M. $\frac{1}{2}$ m. E. by S.
 Wootton Ch.
 Springfield H. E. M. $1\frac{1}{2}$ m. N. by
 W. St. Helens Ch.
 Springvale. [E. M. 1 m. E. Ryde]
 [Stagwell. In the parish of Northwood,
 N. Parkhurst Forest]
 Standen F. E. M. $1\frac{1}{4}$ m. S.S.E.
 Newport
 — (Lit.)
 — (East). E. M. $\frac{3}{4}$ m. W.
 by N. Arreton Ch.
 — (West) $\frac{1}{2}$ m. N.N.E.
 E. Standen F.
 — Copse. Lit. S.
 — E. S.
 Standen Ho. E. M. $\frac{1}{4}$ m. S. Stan-
 den F.
 Standham. (See Standen)
 Staplers F. E. M. [On Staplers H.]
 — H. [1 m. E. Newport]
 Star Inn. E. M. $1\frac{1}{4}$ m. N.W. Gods-
 hill Ch.
 Steepbill Castle. E. M. 1 m. E. by
 N. St. Lawrence Ch.
 Stenbury F. E. M. $\frac{3}{4}$ m. N. by E.
 Whitwell Ch.
 — (Lit.) $\frac{1}{2}$ m. N.N.E. Sten-
 bury F.
 — (Lower) $\frac{1}{2}$ m. N.W. by
 W. Stenbury F.
 Steyn Wood. E. M.
 Stickworth (Ho. and F.) E. M. 1 m.
 S. by E. Arreton Ch.
 Stislet. W. M. $1\frac{3}{4}$ m. W.N.W.
 Northwood Ch.
 Stroat's F. W. M. [In Northwood
 parish]
 Stone F. E. M. $1\frac{1}{2}$ m. W. by S. Ar-
 reton Ch.

Stoneshell. [E. M. 1 m.] S.E. New-church
 Stonebrook. E. M. $1\frac{1}{2}$ m. N.W. by N, Whitwell Ch.
 Stonelands. [E. M. $\frac{1}{2}$ m. S.E. Bin-stead Ch.]
 Stoneover. W. M. $1\frac{1}{2}$ m. S.W. Shal-fleet Ch.
 Stonepits F. E. M. $\frac{1}{2}$ m. S.E. Bin-stead Ch.
 Stone Place. W. M. $\frac{1}{2}$ m. S.E. by S. Shorwell Ch.
 Stoney Cross H. W. M. $\frac{1}{2}$ m. N. Calbourne Ch.
 Stopler's Copse. W. M.
 Street Place F. W. M. [In the pa-rish of Thorley]
 Stroud Green H. W. M. [$1\frac{1}{2}$ m. N. Chale Ch.]
 ——— Wood. E. M. [1 m. W. by S. Ryde]
 Stragwell. [See Stagwell]
 Style Close Copse. E. M.
 Sullons F. E. M. [In Arretton pa-rish]
 Sutton F. W. M. [1 m. S. Shorwell]
 Swains F. E. M. [$\frac{1}{2}$ m. N.E. Bem-bridge Ch.]
 Swainston (Ho.) W. M. [1 m. E. Calbourne Ch.]
 Swan Pond. E. M.

T.

Tapnel F. W. M. [1 m. S. Thorley Ch.]
 ——— Copse. [Adjoining Tapnel F.]
 Thorley V. W. M. [1 m. E. Yar-mouth]
 ——— Ch. [$\frac{1}{2}$ m. E. Yarmouth]
 ——— F. [E. Thorley Ch.]
 Thorncross [F.] W. M. [1 m. E. Brighstone Ch.]
 Thorness Bay. W. M. [2 m. W. Cowes]
 ——— F. Gr. W. M.
 ——— Lit.
 ——— Wood.
 Tinker's Hole. E. M. [In America Wood, $1\frac{1}{2}$ m. N. Shanklin Ch.]
 ——— Lane. W. M. [In North-wood parish]
 Tollands Bay. (See Totlands)
 Tolt (the) Copse. W. M. [1 m. S. Gatcombe]
 Totlands Bay. W. M. [1 m. S.W. Freshwater]
 Trenchards F. E. M.

Truckles F. E. M. [1 m. N. by W. Brading]

U V

Undercliff. E. M.
 Under Smarden Copse. E. M. [Be-tween Luccombe and Bonchurch]
 Uplands. E. M. [2 m. S.E. Ryde]
 Upton Ho. E. M. [1 m. S. Ryde]
 ——— Lit. F. [$1\frac{1}{2}$ m. S. Ryde]
 Vares F. W. M. [1 m. S. Carisbrook Castle]
 VENTNOR T. E. M.
 Vinnicombe Barn. E. M.
 Vittlefield F. W. M. [$1\frac{1}{2}$ m. N.W. Newport]

W.

Wackland F. E. M. [$\frac{1}{2}$ m. W. New-church Ch.]
 Walpan Chine. [W. M. 1 m. W. Chale Ch.]
 ——— F. [By Walpan Chine]
 Warlands F. W. M. [In Arretton parish]
 Watch Ho. Pt. E. M. [1 m. N. Bembridge Ch.]
 Watchingwell Gr. F. W. M. [2 m. E. Shalfleet Ch.]
 ——— Up. F.
 Watcombe Bay. W. M. [1 m. S. Freshwater Ch.]
 Watergate H. W. M. [1 m. S. Newport]
 Watering Copse. W. M.
 Watershot Cove. E. M. 1 m. S.W. Niton Ch.
 Wearnehill Copse. E. M.
 Week Down. E. M. [S. Appuldur-combe Park]
 ——— F.
 Weeks's H. E. M.
 Well Ho. E. M. [At Niton]
 Wellow H. W. M. [1 m. E. Thor-ley Ch.]
 Werror F. W. M. [1 m. S. North-wood]
 ——— Gr. Wood
 ——— Lit. Wood
 Westbrook F. E. M. [$2\frac{1}{2}$ m. S.E. Ryde]
 ——— Ho.
 West Cliff (Ho.) E. M. [At Niton]
 ——— Court (Ho.) W. M. [$\frac{1}{2}$ m. W. by S. Shorwell Ch.]

- West Mill. W. M. [$\frac{1}{2}$ m. W. Newport]
 Westminster Mill. W. M. [Adjoining Newport N.W.]
 Weston F. W. M. [In Freshwater parish]
 Westover (Ho.) W. M. [In Calbourne V.]
 Westridge (Ho.) [$1\frac{1}{2}$ m. S.E. Ryde]
 West Side. W. M. [1 m. S. Newport]
 Whippance F. W. M. [1 m. W. Northwood Ch.]
 Whippingham V. E. M.
 ———— Ch.
 ———— Street
 Whitcomb H. W. M. [1 m. S. Carisbrook Castle]
 ———— (Gr.) F.
 ———— Wood
 ———— F. E. M.
 White Cliff Bay. E. M. [1 m. E. Bembridge Ch.]
 White Court F. W. M.
 Whitecroft F. W. M. [$1\frac{1}{2}$ m. S. Newport]
 White Cross F. E. M.
 White House F. W. M.
 ———— E. M. At Adgeton
 Whiteley Bank. E. M. [1 m. E. Godshill Ch.]
 White Oak. W. M.
 ———— Pit. [W. M. ?]
 Whitewalls F. W. M. [1 m. E. Thorley Ch.]
 Whitwell V. E. M. 1 m. N.E. by N. Niton
 Wilderness (the). E. M. [$\frac{1}{2}$ m. S.W. Bleak Down]
 Wilmingham F. W. M. [In Freshwater parish]
 William's Moor. E. M.
- Winford F. E. M. [1 m. S. Newchurch]
 Winston H. E. M. [Adjoining Winford]
 Woodhouse F. E. M.
 Wood House F. E. M.
 Woodlands. E. M. [1 m. E. by S. Ryde]
 Woodvale. [W. M. 1 m. W. West Cowes]
 Woolverton F. E. M. [1 m. E. by S. Brading]
 ———— W. M. [1 m. S.S. Shorwell Ch.]
 ———— E. M. [By St. Lawrence Ch.]
 Wootton Br. V. E. M.
 ———— Ch.
 ———— Common
 Wrongs F. E. M. [In Whippingham parish]
- Y.
- Yafford Ho. W. M. 1 m. S.W. Shorwell Ch.
 ———— Ham. W. M.
 ———— Mill. W. M.
 Yar (East) R. E. M.
 ———— (West) R. W. M.
 Yarborough Monument. E. M. [On Bembridge D.]
 Yarbridge H. E. M. [$\frac{1}{2}$ m. S. Brading]
 Yarbury Hill. E. M.
 Yard F. E. M. [1 m. N. Godshill Ch.]
 YARMOUTH. W. M.
 Yaverland V. E. M. 1 m. S.E. Brading



LATIN INDEX

TO THE

GENERIC AND SPECIFIC NAMES AND SYNONYMS.

	Page		Page		Page
ACEB, L.	93	AJUGA, L.	392	ANCHUSA, L.	320
campestre, L.	95	Chamæpitys	393	sempervirens, L.	320
Pseudo-platanus,		reptans, L.	392	ANDROSEMUM, All.	84
L.	94	ALCHEMILLA, L.	151	officinale, All.	84
ACHILLÆA, L.	264	arvensis, Sm.	151	ANEMONE, L.	4
Millefolium, L.	264	ALISMA, L.	521	nemorosa, L.	4
Ptarmica, L.	264	Plantago, L.	521	<i>Anethum Fœniculum</i>	210
<i>Acinos vulgaris</i> , Pers.	378	ranunculoides, L.	521	ANGELICA, L.	213
ACONITUM, L.	17	ALLIARIA, Adans.	36	sylvestris, L.	213
Napellus, L.	18	officinalis, L.	36	ANTHEMIS, L.	261
ADONIS, L.	5	ALLIUM, L.	502	arvensis, L.	262
autumnalis, L.	5	oleraceum, L.	502	Cotula, L.	263
ADOXA, L.	224	ursinum, L.	502	nobilis, L.	261
moschatellina, L.	224	vineale, L.	502	ANTHOXANTHUM, L.	577
ÆGOPODIUM, L.	201	ALNUS, Tourn.	465	odoratum, L.	577
Podagraria, L.	202	glutinosa, Gærtn.	465	ANTHRISCUS, Pers.	221
ÆTHUSA, L.	209	ALOPECURUS, L.	579	sylvestris, Koch.	221
Cynapium, L.	209	agrestis, L.	581	vulgaris, Pers.	221
AGRAPHIS, Link.	504	bulbosus, L.	580	ANTHYLLIS, L.	114
nutans, Link.	504	geniculatus, L.	580	maritima, Schw.	114
AGRIMONIA, L.	150	pratensis, L.	579	Vulneraria, L.	114
Eupatoria, L.	150	<i>Alysine marina</i> , M.	69	ANTIRRHINUM, L.	344
<i>Agrostemma Githago</i> ,		media, L.	76	<i>Cymbalaria</i> , L.	351
L.	65	peploides, Wahl.	74	Elatine, L.	352
AGROSTIS, L.	585	rubra, Wahl.	76	Linaria, L.	347
alba, L.	586	ALTHEA, L.	82	majus, L.	344
canina, L.	585	officinalis, L.	82	minus, L.	350
setacea, Curt.	586	<i>Alyssum maritimum</i> ,		Orontium, L.	346
vulgaris, With.	585	Willd.	39	repens, L.	348
AIRA, L.	589	AMMOPHILA, Host.	582	spurius, L.	354
aquatica, Sm.	588	arenaria, Link.	582	<i>Apargia autumnalis</i> ,	
cæspitosa, L.	591	arundinacea, Host.	582	Willd.	281
caryophyllea, L.	590	<i>Anacamptis pyrami-</i>		<i>Hedypnois</i> , Huds.	280
cristata, L.	592	dalis, Rich.	479	hispida, Willd.	280
flexuosa, L.	590	ANAGALLIS, L.	403	<i>Aphanes arvensis</i> , L.	151
præcox, L.	589	arvensis, L.	403	ARIUM	197
<i>Airochloa cristata</i> ,		cærulea, Schreb.	403	graveolens	198
Link	592	tenella, L.	404	<i>Petroselinum</i> , L.	198

	Page		Page		Page
APORANTHUS , Brom.	117	Adiantum-nigrum , L.	632	BIDENS , L.	268
<i>Trifoliastrum</i> , Brom.	117	<i>marinum</i> , L.	633	<i>cernua</i> , L.	268
AQUILEGIA , L.	15	<i>Ruta-muraria</i> , L.	633	<i>minima</i> , L.	268
<i>vulgaris</i> , L.	15	<i>Trichomanes</i> , L.	632	<i>tripartita</i> , L.	269
ARABIS , L.	33	ASTER , L.	249	BLECHNUM , L.	634
<i>hirsuta</i> , R. Br.	33	<i>Tripolium</i> , L.	249	<i>boreale</i> , Sw.	634
<i>thaliana</i> , L.	35	ASTRAGALUS , L.	125	BORAGO , L.	320
ARCTIUM , L.	270	<i>glycyphyllus</i> , L.	125	<i>officinalis</i> , L.	320
<i>Bardana</i> , Willd.	270	<i>hypoglottis</i> , L.	126	<i>Borkhausia setosa</i> , DC	384
<i>Lappa</i> , L.	270	ATHYRIUM , Roth	633	BOTRYCHIUM , Sw.	636
ARENARIA , L.	75	<i>Filix-fœmina</i> , Roth	633	<i>Lunaria</i> , Sw.	636
<i>marina</i> , Sm.	76	ATRIPLEX , L.	423	BRACHYPODIUM , Beauv.	620
<i>media</i> , L.	76	<i>angustifolia</i> , Sm.	424	<i>sylvaticum</i> , Beauv.	621
<i>peploides</i> , L.	74	<i>angustifolia</i> , Hook.	425	BRASSICA , L.	36
<i>rubra</i> , L.	76	<i>arenaria</i> , Woods	640	<i>Napus</i> , L.	37
<i>serpyllifolia</i> , L.	75	<i>erecta</i> , Huds.	425, 640	<i>nigra</i> , Koch	37
<i>trinervis</i> , L.	75	<i>hastata</i> , Sm.	425	<i>oleracea</i> , L.	36
ARMERIA , Willd.	409	<i>laciniata</i> , L.	426, 640	BRIZA , L.	602
<i>maritima</i> , Willd.	410	<i>littoralis</i> , L.	423	<i>aspera</i> , Knap.	603
ARMORACIA , Fl. Wett.	41	<i>littoralis</i> , Hook.	424	<i>media</i> , L.	602
<i>rusticana</i> , Fl. Wett.	41	<i>marina</i> , L.	424, 640	<i>minor</i> , L.	603
ARRHENATHERUM , Beauv.	594	<i>niteus</i> , Rebert.	426	BROMUS , L.	608
<i>avenaceum</i> , Beauv.	594	<i>patula</i> , L.	425	<i>agrestis</i> , All.	610
<i>bulbosum</i> , Host.	594	<i>portulacoides</i> , L.	427	<i>arvensis</i> , Parnell	611
ARTEMISIA , L.	266	<i>rosea</i> , L.	425	<i>asper</i> , L.	609
<i>Absinthium</i> , L.	266	ATROPA , L.	329	<i>commutatus</i> , Schr.	611
<i>cærulescens</i> , L.	268	<i>Belladonna</i> , L.	329	<i>erectus</i> , Huds.	610
<i>gallica</i> , L.	267	<i>physaloides</i> , L.	330	<i>giganteus</i> , L.	608
<i>marina</i> , Huds.	268	AVENA , L.	612	<i>littoreus</i> , Host.	607
<i>maritima</i> , L.	267	<i>elatior</i> , L.	594	<i>mollis</i> , L.	610
<i>vulgaris</i> , L.	267	<i>fatua</i> , L.	612	<i>multiflorus</i> , Host.	611
ARUM , L.	526	<i>flavescens</i> , L.	614	<i>patulus</i> , M. et K.	611
<i>italicum</i> , Lam.	527	<i>pratensis</i> , L.	614	<i>pratensis</i> , Sw.	611
<i>maculatum</i> , L.	526	<i>pubescens</i> , L.	614	<i>racemosus</i> , L.	611
<i>Arundo arenaria</i> , Sm.	583	<i>strigosa</i> , Schreb.	613	<i>secalinus</i> , L.	612
<i>Epigejos</i> , L.	587	BALLOTA , L.	391	<i>sterilis</i> , L.	609
<i>Phragmites</i> , L.	615	<i>fœtida</i> , Lam.	391	<i>sylvaticus</i> , Poll.	621
ASPARAGUS , L.	507	<i>nigra</i> , L.	391	<i>triflorus</i> , L.	608
<i>officinalis</i> , L.	507	<i>ruderalis</i> , Fries	391	BRYONIA , L.	180
ASPERULA , L.	240	BARBAREA , R. Br.	31	<i>dioica</i> , Jacq.	180
<i>Cynanchica</i> , L.	241	<i>præcox</i> , R. Br.	32	<i>Bucetum arundinaceum</i> , Parn.	607
<i>odorata</i> , L.	240	<i>vulgaris</i> , R. Br.	31	<i>Bunias Cakile</i> , L.	45
<i>Aspidium aculeatum</i> , Sw.	629	<i>Bartsia viscosa</i> , L.	362	BUNICUM , L.	202
<i>angulare</i> , Willd.	630	BELLIS , L.	257	<i>flexuosum</i> , With.	202
<i>dilatatum</i> , Willd.	632	<i>perennis</i> , L.	258	BUPLEURUM , L.	203
<i>erosum</i> , Schukr.	640	BERBERIS , L.	18	<i>rotundifolium</i> , L.	203
<i>Filix-fœmina</i> , Be.	633	<i>vulgaris</i> , L.	19	<i>tenuissimum</i> , L.	204, 639
<i>Filix-mas</i> , Sw.	631, 640	BETA , L.	421	BUTOMUS , L.	522
<i>Lobatum</i> , Sw.	629	<i>maritima</i> , L.	421	<i>umbellatus</i> , L.	522
<i>Oreopteris</i> , Sw.	631	<i>vulgaris</i> , Sm.	421	CAKILE , Tourn.	45
<i>spinulosum</i> , Willd.	632	<i>Betonica officinalis</i> , Sm.	390	<i>maritima</i> , Willd.	45
<i>Thelypteris</i> , Sw.	630	BETULA , L.	464	CALAMAGROSTIS , Adans.	587
ASPLENIUM , L.	632	<i>alba</i> , L.	464		
		<i>Alnus</i> , L.	465		

	Page		Page		Page
Epigejos, Roth . . .	587	curta, Good. . .	558	nigrescens, Willd. . .	275
CALAMINTHA . . .	378	dioica, L. . .	549	Scabiosa, L. . .	276
Acinos, Clairv. . .	378	distaus, L. . .	563	solstitialis, L. . .	276
Clinopodium, Bth. . .	381	disticha, Huds. . .	551	CENTRANTHUS, DC. . .	242
officinalis, Mœnch. . .	379	divisa, Huds. . .	550	ruber, DC. . .	242
sylvatica, Bromf. . .	380	divulsa, Good. . .	554	CENTUNCULUS, L. . .	405
CALLITRICHE, L. . .	176	Drymeia, Ehrh. . .	569	minimus, L. . .	405
autumnalis, DC. . .	177	extensa, Good. . .	562	CEPHALANTHERA, . . .	
pedunculata, DC. . .	177	filiformis, Fl. . .	572	Rich. . .	490
platycarpa, Kütz. . .	177	flacca, Retz. . .	573	ensifolia, Rich. . .	492
verna, L. . .	176	flava, L. . .	562	grandiflora, Bab. . .	490
verna, Sm. . .	177	fulva, Good. . .	564	CERASTIUM, L. . .	72
CALLUNA, Salisb. . .	297	Gibsoni, Bab. . .	559	aquaticum, L. . .	71
vulgaris, Salisb. . .	297	glauca, Scop. . .	573	atrovirens, Bab. . .	73
CALTHA, L. . .	12	Goodenovi, Gay . .	559	glomeratum, Thuill .	72
palustris, L. . .	13	gracilis, Curt. . .	561	glutinosum, Fries . .	72
Calystegia sepium, . .		hirta, L. . .	573	pedunculatum, Bab. .	73
Br. . .	314	intermedia, Good. .	551	pumilum, Curt. . .	73
Soldanella, Br. . .	315	lævigata, Sm. . .	566	scandens, Lej. . .	71
CAMPANULA, L. . .	290	montana, L. . .	572	semidecandrum, L. .	72
glomerata, L. . .	291	muricata, L. . .	553	tetrandrum, Curt. . .	73
hederacea, L. . .	294	nemorosa, Willd. . .	552	triviale, Link . . .	72
hybrida, L. . .	293	Œderi, Ehrh. . .	562	viscosum, L. . .	72
medium, L. . .	293	ovalis, Good. . .	558	vulgatum, L. . .	72
patula, L. . .	293	pallens, L. . .	567	Cerasus acida, Bore. .	144
Rapunculus, L. . .	293	paludosa, Good. . .	576	austera, Host. . .	144
rotundifolia, L. . .	292	panicea, L. . .	568	collina, Lej. . .	144
Trachelium, L. . .	292	paniculata, L. . .	553	vulgaris, Mill. . .	144
CAPSELLA, DC. . .	44	pendula, Huds. . .	570	CERATOPHYLLUM, L. .	178
Bursa-pastoris, DC. .	44	pilulifera, L. . .	572	—? . . .	178
CARDAMINE, L. . .	34	præcox, Jacq. . .	572	CETERACH, Willd. . .	628
hirsuta, L. . .	35	Pseudo-cyperus, L. .	571	officinatum, Willd. .	629
pratensis, L. . .	34	pulicaris, L. . .	550	CHELOPHYLLUM, L. .	220
CARDUUS, L. . .	270	recurva, Huds. . .	573	sylestris, L. . .	221
acanthoides, L. . .	270	remota, L. . .	557	temulentum, L. . .	220
acaulis, L. . .	273	riparia, Curt. . .	575	CHEIRANTHUS, L. . .	29
arvensis, Curt. . .	272	speirostachya, Whl. .	564	Cheiri, L. . .	29
crispus, L. . .	270	spicata, Huds. . .	554	fruticosus, L. . .	29
eriphorus, L. . .	271	stellulata, Good. . .	557	incanus, L. . .	28
Forsteri, Ed. . .	272	stricta, Good. . .	560	CHELIDONIUM, L. . .	25
laucolatus, L. . .	271	strigosa, Huds. . .	569	Glaucium, L. . .	24
marianus, Sm. . .	274	sylvatica, Huds. . .	568	majus, L. . .	25
nutans, L. . .	270	vulgaris, Fries . .	559	Chenopodium mariti-	
palustris, L. . .	272	vilpina, L. . .	552	ma, Mey. . .	414
pratensis, Huds. . .	273	Witheringii, Gray . .	552	CHENOPODIUM, L. . .	415
tenuiflorus, Curt. . .	271	CARLINA, L. . .	269	acutifolium, Sm. . .	416
CAREX, L. . .	549	vulgaris, L. . .	269	album, L. . .	417
acuta, L. . .	560	Castanea vesca, Gært. .	471	Bonus-Henricus, . .	
acuta, Curt. . .	576	CATABROSA, Beauv. .	588	L. . .	420
ampullacea, Good. . .	574	aquatica, Beauv. . .	588	glaucum, L. . .	417
angustifolia, Sm. . .	559	Caucalis Anthriscus, .		intermedium, M. et	
arenaria, L. . .	551	Sm. . .	216	K. . .	418
axillaris, Good. . .	555	infesta, Sm. . .	217	maritimum, L. . .	414
binervis, Sm. . .	565	nodosa, Sm. . .	218	murale, L. . .	418
Bœrninghauseni-		CENTAUREA, L. . .	275	olidum, Curt. . .	415
ana, Weihe . . .	555	Calcitrapa, L. . .	276	polyspermum, L. . .	416
cæspitosa, Sm. . .	559, 560	Cyanus, L. . .	276	polyspermum, Curt. .	416
crassa, Host. . .	575	nigra, L. . .	275	rubrum, L. . .	420

	Page		Page		Page
urbicum, L.	418	CORONOPTIS, Hall.	44	maritima, Cass.	265
vulvaria, L.	415	Ruellii, Hall.	44	DIPSACUS, L.	245
<i>Chironia littoralis</i> ,		didyma, Sm.	44	sylvestris, L.	245
Sm.	310	CORYDALIS, DC.	27	DRABA, L.	39
pulchella, Sm.	310	claviculata, DC.	27	verna, L.	39
CHLORA, L.	308	CORYLUS, L.	467	DROSEREA, L.	55
perfoliata, L.	308	Avellana, L.	467	rotundifolia, L.	55
CHRYSANTHEMUM, L.	259	COTYLEDON, L.	186		
Leucanthemum, L.	259	Umbilicus, L.	186		
segetum, L.	259	CRAMBE, L.	48	ECHINUM, L.	321
CHRYSOSPLENIUM, L.	193	maritima	48	italicum, Sm.	322
oppositifolium, L.	193	CRATÆGUS, L.	163	vulgare, L.	322
CICHORIUM, L.	277	eriocarpa, Lindl.	163	ELEOCHARIS, Br.	542
Intybus, L.	277	monogyna, Jacq.	163	multicaulis, Sm.	542
CINERARIA, L.	252	Oxyacantha, L.	163	palustris, Br.	542
campestris, Retz.	252	Oxyacantha, Jacq.	163	<i>Eleogiton fluitans</i> ,	
integrifolia, With.	252	CREPIS, L.	284	Link.	543
CIRCEA, L.	174	setosa, Hall.	284	EPILOBIUM, L.	169
Lutetiana, L.	174	tectorum, Sm.	284	angustifolium, L.	169
<i>Cirsium anglicum</i> ,		virens, L.	284	hirsutum, L.	171
Lam.	273	CRITHMUM, L.	212	montanum, L.	173
<i>Cistus Helianthemum</i> ,		maritimum, L.	212	obscurum, Reich.	639
L.	50	Cucubalus Behen, Sm.	61	palustre, L.	173
tomentosus, Sm.	50	CUSCUTA, L.	316	parviflorum, Schr.	172
CLADIUM, Schrad.	540	Epithymum, L.	318	tetragonum, L.	173
Mariscus, R. Br.	540	europæa, L.	317	virgatum, Fries	639
CLEMATIS, L.	2	Trifolii, Bab.	318	virgatum, Fries	173
Vitalba, L.	2	CYNOGLOSSUM, L.	319	EPIPACTIS, Rich.	489
<i>Clinopodium vulgare</i> ,		Hænkii, R. et Sch.	319	grandiflora, Sm.	491
L.	382	officinale, L.	319	latifolia, Sw.	489
<i>Clypeola maritima</i> , L.	39	CYNOSURUS, L.	596	palustris, Sw.	490
<i>Cnicus acaulis</i> , Willd.	273	cristatus, L.	596	EQUISETUM, L.	626
arvensis, Hoffm.	272	CYPERUS, L.	538	arvense, L.	626
eriphorus, Willd.	271	longus, L.	539	fluriatile, L.	626, 628
Forsteri, Sm.	272	<i>Cytisus scoparius</i> ,		limosum, L.	628
lanceolatus, Willd.	271	DC.	110	palustre, L.	628
palustris, Willd.	272			sylvaticum, L.	627
pratensis, Willd.	273			Telmateja, Ehrh.	626
C'CHLEARIA, L.	40	DACTYLIS, L.	596	ERICA, L.	296
anglica, L.	40	glomerata, L.	596	cinerea, L.	296
Armoracia, L.	41	DAPHNE, L.	436	Tetralix, L.	296
danica, L.	40	laureola, L.	436	vulgaris, L.	297
granlandica, L.	40	Mezerium, L.	438	ERIGERON, L.	250
officinalis, L.	40	DATURA, L.	332	acris, L.	251
officinalis, Hook.	40	Stramonium, L.	332	ERIOPHORUM, L.	547
Colchicum autumnale, L.	510	DAUCUS, L.	214	angustifolium, Rth.	548
COMARUM, L.	152	Carota, L.	214	latifolium, Hoppe	548
palustre, L.	153	maritimus, With.	216	polystachion, L.	547
CONIUM, L.	195	DELPHINIUM, L.	17	polystachion, L.	548
maculatum, L.	195	Consolida, L.	17	pubescens, Sm.	548
CONVOLVULUS, L.	312	DIANTHUS, L.	59	vaginatum, L.	547
arvensis, L.	312	Armeria, L.	60	ERODIUM, L'Hérit.	101
sepium, L.	314	prolifer, L.	60	cicutarium, Sm.	101
Soldanella, L.	315	DIGITALIS, L.	343	maritimum, Sm.	101
<i>Conyza squarrosa</i> , L.	254	purpurea, L.	343	moschatum, Sm.	101
CORNUS, L.	225	<i>Digraphis arundina-</i>		ERVUM, L.	129
sanguinea, L.	225	cea, Trin.	588	gracile, Sebast.	130
		DIOTIS, Desfont.	265	hirsutum, L.	129

	Page		Page		Page
<i>longifolium</i> , Ten.	130	<i>littorea</i> , Wahl.	607	GERANIUM, L.	96
<i>polyspermum</i> , Sm.	130	<i>lohiacea</i> , Sm.	608	<i>columbinum</i> , L.	100
<i>tetraspermum</i> , L.	129	<i>Myurus</i> , Sm.	605	<i>dissectum</i> , L.	99
<i>varium</i> , Brot.	130	<i>ovina</i> , L.	606	<i>lucidum</i> , L.	96
ERYNGIUM, L.	193	<i>pratensis</i> , Huds.	607	<i>malvaceum</i> , Burm.	97
<i>maritimum</i> , L.	194	<i>Pseudo-Myurus</i> ,		<i>molle</i> , L.	98
ERYSIMUM, L.	36	Koch	605	<i>pratense</i> , L.	101
<i>Alliaria</i> , L.	36	<i>rubra</i> , L.	607	<i>purpureum</i> , Forst.	96
<i>Barbarea</i> , L.	31	<i>sylvatica</i> , Sm.	621	<i>pusillum</i> , L.	98
<i>cheiranthoides</i> , L.	36	<i>uniglumis</i> , Soland.	606	<i>pyrenaicum</i> , Reich.	100
<i>officinale</i> , L.	35	<i>Ficaria ranunculoides</i> ,		<i>Robertianum</i> , L.	96
<i>præcox</i> , Sm.	32	DC.	7	<i>rotundifolium</i> , L.	97
ERYTHRÆA, Renealm.	309	FILAGO, L.	257	GEUM, L.	149
<i>Centaurium</i> , Pers.	309	<i>germanica</i> , L.	257	<i>rivale</i> , L.	149
<i>linarifolia</i> , Pers.	310	<i>minima</i> , Pers.	257	<i>urbatum</i> , L.	149
<i>littoralis</i> , Hook.	310	<i>montana</i> , DC.	257	<i>Githago segetum</i> , Desf.	65
<i>pulchella</i> , Hook.	310	FENICULUM, Hoffm.	210	GLACIUM, Tourn.	24
EUONYMUS, L.	104	<i>vulgare</i> , Gärtn.	210	<i>luteum</i> , Scop.	24
<i>europæus</i> , L.	104	FRAGARIA, L.	153	GLAUX, L.	406
EUPATORIUM, L.	247	<i>vesca</i> , L.	153	<i>maritima</i> , L.	406
<i>cannabinum</i> , L.	247	FRANKENIA, L.	58	<i>Glechoma hederacea</i> ,	
EUPHORBIA, L.	440	<i>lævis</i> , L.	58	L.	385
<i>amygdaloides</i> , L.	442	FRAXINUS, L.	303	GLYCERIA, R. Br.	602
<i>Cyperissias</i> , L.	445	<i>excelsior</i> , L.	303	<i>Borreri</i> , Bab.	600
<i>exigua</i> , L.	444	FUMARIA, L.	26	<i>fluitans</i> , Scop.	602
<i>helioscopia</i> , L.	440	<i>capreolata</i> , L.	26	<i>plicata</i> , Fries	602
<i>Lathyrus</i> , L.	444	<i>claviculata</i> , L.	27	GNAPHALIUM, L.	256
<i>Paralias</i> , L.	445	<i>officinalis</i> , L.	27	<i>erectum</i> , Huds.	256
<i>Peplis</i> , L.	440	<i>micrantha</i> , Lag.	27	<i>germanicum</i> , Huds.	257
<i>Peplus</i> , L.	443			<i>minimum</i> , Sm.	257
<i>pilosa</i> , L.	445	GALANTHUS, L.	496	<i>sylvaticum</i> , L.	256
<i>platyphylla</i> , L.	440	<i>nivalis</i> , L.	496	<i>uliginosum</i> , L.	256
<i>portlandica</i> , L.	443	<i>Galeobdolon luteum</i> ,		Grammitis Ceterach,	
<i>stricta</i> , L.	440	Huds.	388	Sw.	629
<i>sylvatica</i> , L.	442	GALEOPSIS, L.	389	GYMNADENIA, Br.	479
EUPHRASIA, L.	361	<i>Ladanium</i> , L.	389	<i>conopsea</i> , Br.	479
<i>Odontites</i> , L.	362	<i>Tetrahit</i> , L.	389		
<i>officinalis</i> , L.	361	GALIUM, L.	238	HABENARIA, Br.	480
<i>Fagopyrum esculen-</i>		<i>Aparine</i> , L.	240	<i>bifolia</i> , Bab.	482
<i>tum</i> , Mæneh	436	<i>cruciatum</i> , With.	238	<i>chlorantha</i> , Bab.	480
FAGUS, L.	469	<i>Mollugo</i> , L.	238	<i>viridis</i> , Br.	480
<i>sylvatica</i> , L.	470	<i>montanum</i> , With.	238	HALIANTHUS, Fries	74
FEDIA, Vahl.	243	<i>palustre</i> , L.	238	<i>pepoides</i> , Fries	74
<i>Auricula</i> , DC.	243	<i>saxatile</i> , L.	239	HALIMUS, Wallr.	427
<i>carinata</i> , Lois.	243	<i>tricornis</i> , With.	239	<i>portulacoides</i> ,	
<i>dentata</i> , Vahl.	244	<i>uliginosum</i> , L.	239	Wallr.	427
<i>mixta</i> , Vahl.	244	<i>verum</i> , L.	238	HEDERA, L.	222
<i>olitoria</i> , Vahl.	243	<i>Witheringii</i> , Sm.	238	<i>Helix</i> , L.	223
FESTUCA, L.	605	GASTRIDIVM, Beauv.	583	<i>Hedypnois autumn-</i>	
<i>arundinacea</i> , Schr.	607	<i>lendigerum</i> , Beauv.	583	<i>lis</i> , Sm.	281
<i>bromoides</i> , L.	605	GENISTA, L.	111	<i>Hedysarum Onobry-</i>	
<i>duriuscula</i> , L.	606	<i>anglica</i> , L.	112	<i>chis</i> , L.	137
<i>elatiar</i> , L.	607	<i>tinctoria</i> , L.	111	HELIANTHEMUM,	
<i>elatiar</i> , Host.	608	GENTIANA, L.	310	Tourn.	50
<i>giganteus</i> , Vill.	608	<i>Amarella</i> , L.	311	<i>vulgare</i> , Gärtn.	50
<i>hirsuta</i>	607	<i>campestris</i> , L.	311	HELLEBORUS, L.	13
		<i>Centaurium</i> , Sm.	310	<i>foetidus</i> , L.	14

	Page		Page		Page
viridis, L.	13	quadrangulum, L.	88	KNAUTIA, L.	245
HELMINTHIA, Juss.	283	veronense, Schrank	86	arvensis, Coult.	246
echioides, Gærtn.	283	HYPOCHÆRIS, L.	278	KÖHLERIA, Pers.	591
HELOSCIADIUM, Koch	200	glabra, L.	278	cristata, Pers.	591
nodiflorum, Koch	200	radicata, L.	278	KONIGA, Adans.	39
inundatum, Koch	200			maritima, R. Br.	39
HEBACLEUM, L.	214				
angustifolium, Sm.	214	ILEX, L.	300	LACTUCA, L.	286
Sphondylium, L.	214	Aquifolium, L.	300	muralis, DC.	286
HESPERIS, L.	35	INULA, L.	253	virosa, L.	286
inodora, L.	35	Conyza, DC.	254	LAMIMUM, L.	385
matronalis, L.	35	crithmoides, L.	254	album, L.	387
HIERACIUM, L.	287	dysenterica, Gærtn.	255	amplexicaule, L.	386
boreale, Fries	289	Helenium, L.	253	Galeobdolon,	
inuloides, Bab.	289	Pulicaria, L.	255	Crantz.	388
murorum, L.	288	IRIS, L.	493	incisum, Willd.	386
puleterianum, Merat.	287	foetidissima, L.	494	intermedium, Fries	639
Pilosella, L.	287	Pseud-acorus, L.	493	purpureum, L.	386
Sabadum, Sm.	289	Isolepis fluitans,		vulgatum, Benth.	387
sylvestre, Tausch	289	R. Br.	543	LAPSAÑA, L.	277
umbellatum, L.	289	Savii, Schul.	544	communis, L.	277
vulgatum, Fr.	287	setacea, R. Br.	544	Larbrea uliginosa, St.	
HIPPOCREPIS, L.	136			Hil.	70
comosa, L.	136	JASIONE, L.	295	LASTREA, Presl	630
HIPPURIS, L.	174	montana, L.	295	dilatata, Presl	632
vulgaris, L.	175	JUNCUS, L.	511	erosa	640
HOLCUS, L.	594	acutiflorus, Ehrh.	513	Filix-mas, Presl	631, 640
avenaceus, Scop.	594	acutus, L.	511	Oreopteris, Presl	631
lanatus, L.	594	adscendens, Host.		spinulosa, Presl	632
mollis, L.	594	Gram.	513	Thelypteris, Presl	630
Honckenya peploides,		articulatus, Sm.	513	LATHRÆA, L.	369
Ehrh.	74	bufonius, L.	516	Squamaria, L.	369
HORDEUM, L.	616	bulbosus, Sm.	515	LATHYRUS, L.	131
maritimum, With.	618	campestris, Sm.	520	hirsutus, L.	133
murinum, L.	616	canosus, Bich.	515	latifolius, L.	132
pratense, Huds.	617	compressus, Jacq.	515	maritimus, Big.	133
secalinum, Schreb.	617	conglomeratus, L.	512	Nissolia, L.	133
HUMULUS, L.	449	effusus, L.	512	pratensis, L.	132
Lupulus, L.	449	diffusus, Hoppe	512	sylvestris, L.	132
Hyacinthus non-scriptus,		Forsteri, Sm.	518	Lavatera arborea	83
L.	504	glaucus, Sibth.	513	LEMNA, L.	533
HYDROCHARIS, L.	474	lamprocarpus,		gibba, L.	533
Morsus-Ranæ, L.	474	Ehrh.	513	minor, L.	533
HYDROCOTYLE, L.	195	maritimus, Sm.	511	trisolca, L.	533
vulgaris, L.	195	maximus, Willd.	516	polyrhiza, L.	533
HYOSCYAMUS, L.	330	obtusiflorus, Ehrh.	514	LEPTURUS, Brown.	622
niger, L.	330	pilosus, L.	516, 517	incurvatus, Fries	623
HYPERICUM, L.	86	squarrosus, L.	515	LEONTODON, L.	280
Androsæmum, L.	84	subverticillatus,		hispidum, L.	280
calycinum, L.	86	Wulf.	514	lavigatum, DC.	284
dubium, Leers	639	supinus, Mœnch.	514	palustre, Sm.	284
elodes, L.	92	sylvaticus, Huds.	516	Taraxacum, L.	284
hirsutum, L.	90	sylvaticus, Fl. Dan.	545	LEPIDIUM, L.	42
humifusum, L.	89	uliginosus, Willd.	514	canpestre, L.	42
maculatum, Crantz.	639	Juniperus communis,		didymum, Sm.	44
montanum, L.	91	L.	473	hirtum, Hook.	43
perforatum, L.	86				
pulchrum, L.	92				

	Page		Page		Page
sativum, L.	44	vespertina, Sibth.	64	MENYANTHES, L.	312
Smithii, Hook.	43	LYCOPSIS, L.	321	trifoliata, L.	312
<i>Lerouxia nemorum</i> ,		arvensis, L.	321	MERCURIALIS, L.	445
Merat.	402	LYCOPUS, L.	374	ambigua, L.	446
LIGUSTRUM, L.	302	europæus, L.	374	annua, L.	446
vulgare, L.	302	LYSIMACHIA, L.	400	perennis, L.	445
<i>Limbarda crithmoides</i> ,		nemorum, L.	402	Micandra Physaloides,	
Hook.	254	Nummularia, L.	402	Gærtn.	330
LINARIA, Tournef.	347	vulgaris, L.	400	MILIUM, L.	584
Cymbalaria, Mill.	351	LYTHRUM, L.	178	effusum, L.	584
Elatine, Desf.	352	Salicaria, L.	178	lendigerum, Sm.	583
italica, Trev.	348			MÆNCHIA, Ehrh.	68
minor, Desf.	350			erecta, Sm.	68
repens, Act.	348	MALACHIUM, Fries	71	<i>Mæhringia trinervis</i> ,	
striata, DC.	348	aquaticum, Fr.	71	Clairv.	75
stricta, Hom.	348	MALVA, L.	80	MOLINIA, Mænech	593
spuria, Mill.	353	moschata, L.	81	cærulea, Mænech	593
vulgaris, Mænech.	347	rotundifolia, L.	80	MONOTROPA, L.	298
LINUM, L.	77	sylvestris, L.	80	Hypopitis, L.	298
angustifolium,		MARRUBIUM, L.	391	MONTIA, L.	182
Huds.	77	vulgare, L.	391	fontana, L.	182
catarticum, L.	78	<i>Matricaria Chamo-</i>		MYOSOTIS, L.	325
Radiola, L.	79	milla, L.	261	arvensis, Hoffm.	326
usitatissimum, L.	77	inodora, L.	261	arvensis, Sm.	326
LISTERA, Br.	487	Parthenium, L.	260	cæspitosa, Schultz	326
Nidus-avis, Sm.	488	MATTHIOLA, R. Br.	28	collina, Hoffm.	326
ovata, Br.	487	incana, R. Br.	28	hispida, Schlecht	326
LITHOSPERMUM, L.	324	MEDICAGO, L.	114	intermedia, Link	326
arvense, L.	325	denticulata, Willd.	115	palustris, With.	325
officinale, L.	324	lupulina, L.	115	<i>scorpioides palustris</i> ,	
LOLIUM, L.	621	maculata, Sibth.	115	L.	325
arvense, L.	622	polymorpha, Sm.	115	repens, Don	325
italicum, A. Braun	622	sativa, L.	114	pusilla, Loisl	327
multiflorum, Lam.	622	MELAMPYRUM, L.	354	versicolor, Schm.	327
perenne, L.	621	arvense, L.	355	MYOSCHUS, L.	11
temulentum, L.	622	pratense, L.	354	minimus, L.	12
LONICERA, L.	235	MELICA, L.	592	MYRICA, L.	466
Periclymenum, L.	235	cærulea, L.	593	Gale, L.	466
LOTUS, L.	124	uniflora, Retz	592	MYRIOPHYLLUM, L.	175
corniculatus, L.	124	MELILOTUS, Tournef.	116	alterniflorum, DC.	176
corniculatus, L.	124	leucantha, Koch.	116	spicatum, L.	175
major, Scop.	125	officinalis, L.	116		
tenuifolius, Sm.	125	vulgaris, Willd.	116	NARCISSUS, L.	496
tenuis, Kit.	125	<i>Melissa Calamintha</i> ,		florus, Curt.	499
villosus, Thuill.	124	L.	379	poeticus, L.	500
LUZULA, DC.	516	MENTHA, L.	371	Pseudo-narcissus,	
Borreri, Bromf.	517	aquatica, L.	372	L.	497
campestris, Willd.	520	arvensis, L.	373	NARDUS, L.	579
Forsteri, DC.	518	arvensis, Benth.	373	stricta, L.	579
maxima, DC.	516	crispa, Roth	372	NATHECIUM, Huds.	510
multiflora, Lej.	520	gentilis, L.	373	ossifragum, Huds.	510
pilosa, Willd.	517	hirsuta, L.	372	NASTURTIUM, R. Br.	30
sylvatica, Birch.	516	piperita, L.	372	officinale, R. Br.	30
LYCHNIS, L.	64	Pulegium, L.	374	palustre, DC.	30
dioica, L.	64	rotundifolium, L.	371	terrestre, R. Br.	30
diurna, Sibth.	64	sativa, L.	373	NEOTTIA, L.	488
Flos-cuculi, L.	64	sylvestris, L.	372	Nidus-avis, Rich.	488
Githago, Lam.	65	viridis, L.	372		

	Page		Page		Page
<i>spiralis</i> , Rich.	486	<i>barbata</i> , Pair.	365	PICRIS, L.	282
NEPETA, L.	384	cærulea, Vills.	367	<i>echioides</i> , L.	283
Cataria, L.	384	Hederæ, Duhy	365	hieracioides, L.	282
Glechoma, Benth.	385	elatior, Sut.	366	PIMPINELLA, L.	202
NYPHÆA, L.	19	major, L.	363	Saxifraga, L.	203
alba, L.	19	minor, Sm.	363	PINGICULA, L.	394
<i>Obione portulacoides</i> ,		Picridis, Schultz	366	lusitanica, L.	394
Mey.	427	rapum, Thuill.	362	<i>Pisum maritimum</i> ,	
ÆNANTHE, L.	204	OROBUS, L.	134	L. 133	
crocata, L.	208	<i>tenuifolius</i> , Roth	134	PLANTAGO, L.	410
fistulosa, L.	205	tuberosus, L.	134	Coronopsus, L.	412
Lachenalii, Gmel.	207	OSMUNDA, L.	635	Cynops, L.	412
<i>peucedanifolia</i> ,		Lunaria, L.	636	lanceolata, L.	411
Pollich	205	regalis, L.	635	major, L.	410
Phellandrium, Spr.	209	OXALIS, L.	102	maritima, L.	411
pimpinelloides, L.	205	Acetosella, L.	102	media, L.	410
ÆNOTHERA, L.	173	corniculata, L.	103	<i>Platanthera chloran-</i>	
biennis, L.	174	stricta, L.	103	<i>tha</i> , Fl. Dan.	481
ONOBRYCHIS, Tourn.	137	<i>Oxyccoccus palustris</i> ,		<i>solsitalis</i> , Drejer	482
sativa, Lam.	137	Rich.	298	POA, L.	596
ONONIS, L.	113	PAPAVER, L.	20	<i>angustifolia</i> , Gaud.	597
arvensis, L.	113	Argemone, L.	20	annua, L.	596
<i>repens</i> , L.	114	dubium, L.	22	<i>Borreri</i> , Hook.	600
ONOPORDUM, L.	273	hybridum, L.	21	bulbosa, L.	597
Acanthium, L.	273	Rhæas, L.	22	compressa, L.	598
OPHIOGLOSSUM, L.	636	somniferum	23	<i>crislata</i> , Host.	592
vulgatum, L.	636	PARIETARIA, L.	448	<i>decumbens</i> , Sm.	595
OPHRYS, L.	483	officinalis, L.	449	<i>procumbens</i> , Curt.	600
apifera, Huds.	483	PARNASSIA, L.	93	pratensis, L.	597
aranifera, Huds.	484	palustris, L.	93	<i>rupestris</i> , With.	600
<i>autumnalis</i> , L.	486	PASTINACA, L.	213	<i>subcærulea</i> , Sm.	597
<i>fucifera</i> , Sm.	484	sativum, L.	213	trivialis, L.	597
<i>insectifera</i> , L.	483	PEDICULARIS, L.	357	POLYGALA, L.	57
muscifera, Huds.	485	palustris, L.	358	<i>amara</i> , Don	57
<i>Nidus-avis</i> , Rich.	488	sylvatica, L.	358	<i>calcareæ</i> , Schultz	57
ovata, Br.	487	PEPLIS, L.	179	<i>comosa</i> , Schukr	58
OPORINIA, Don	281	Portula, L.	179	depressa, Wend.	57
<i>autumnalis</i> , Don	281	Petasites fragrans,		<i>major</i> , Jack.	58
<i>Opulus glandulosus</i> ,		Desf.	249	<i>myrtifolia</i> , Ray	57
Mœnch	232	PETROSELINUM,		<i>serpyllacea</i> , Reich.	57
ORCHIS, L.	475	Hoffm.	198	vulgaris, L.	57
<i>bifolia</i> , Sm.	481	sativum, Hoffm.	198	POLYGONUM, L.	431
<i>conopsea</i> , L.	479	segetum, Koch	199	amphibium, L.	431
<i>enatifolia</i> , Vill.	479	<i>Peucedanum Silaus</i> ,		aviculare, L.	434
latifolia, L.	478	L.	211	aviculare, Sm.	434
<i>laxiflora</i> , Lam.	479	PHALARIS, L.	588	<i>biforme</i> , Wahl.	432
maculata, L.	477	<i>arenaria</i> , Sm.	582	Bistorta, L.	432
mascula, L.	476	arundinacea, L.	588	Convolvulus, L.	435
Morio, L.	475	canariensis, L.	588	<i>Fagopyrum</i> , L.	436
pyramidalis, L.	479	<i>Phellandrium aquati-</i>		Hydropiper, L.	433
ustulata, L.	477	<i>cum</i> , L.	209	lapathifolium, Ait.	432
ORIGANUM, L.	377	PHRAGMITES, Trin.	614	<i>maritimum</i> , Ray	434
vulgare, L.	377	communis, Trin.	614	minus, Hud.	433
ORNITHOGALUM, L.	501	PHILEUM, L.	582	mite, Schrank	433
umbellatum, L.	501	arenarium, L.	582	<i>pensylvanicum</i> ,	
ORNITHOPUS, L.	135	pratensis, L.	582	Curt.	432
perpusillus, L.	136			Persicaria, L.	432
OROBANCHE, L.	362			<i>Persicaria</i> , Wahl.	432

	Page		Page		Page
<i>Raii</i> , Bab.	434, 640	<i>PULMONARIA</i> , L.	322	<i>lutea</i> , L.	49
<i>Roberti</i> , Lois.	434	<i>angustifolia</i> , L.	322	<i>RHAMNUS</i> , L.	106
<i>POLYPODIUM</i> , L.	629	<i>azurea</i> , Bess.	323	<i>catharticus</i> , L.	106
<i>vulgare</i> , L.	629	<i>maculosa</i> , Ger.	323	<i>Fraugula</i> , L.	107
<i>POLYSTICHUM</i> , Roth	629	<i>media</i> , Host.	323	<i>RHINANTHUS</i> , L.	360
<i>angulare</i> , Newm.	630	<i>mollis</i> , Wolf.	323	<i>Crista-galli</i> , L.	360
<i>lobatum</i> , Roth	629	<i>virginica</i> , L.	323	<i>glaber</i> , Lam.	360
<i>POPULUS</i> , L.	460	<i>PYRETHRUM</i> , Hall.	260	<i>minor</i> , Ehrh.	360
<i>alba</i> , L.	460	<i>inodorum</i> , Sm.	261	<i>RHYNCHOSPORA</i> ,	
<i>canescens</i> , Sm.	460	<i>maritimum</i> , Sm.	261	<i>Vahl.</i>	541
<i>nigra</i> , L.	463	<i>Parthenium</i> , Sm.	260	<i>alba</i> , Vahl.	541
<i>tremula</i> , L.	461	<i>PYRUS</i> , L.	164	<i>RIBES</i> , L.	188
<i>POTAMOGETON</i> , L.	534	<i>Aria</i> , Sm.	167	<i>Grossularia</i> , L.	190
<i>crispus</i> , L.	535	<i>aucuparia</i> , Gærtn.	168	<i>nigrum</i> , L.	190
<i>densus</i> , L.	536	<i>communis</i> , L.	164	<i>petraeum</i> , Sm.	188
<i>lucens</i> , L.	534	<i>Malus</i> , L.	165	<i>rubrum</i> , L.	188
<i>natans</i> , L.	534	<i>torminalis</i> , Sm.	166	<i>Uva-crispa</i> , L.	191
<i>natans</i> , Mert.	534	<i>QUERCUS</i> , L.	468	<i>Rosa</i> , L.	160
<i>oblongus</i> , Vir.	534	<i>intermedia</i> , D. Don	468	<i>arvensis</i> , Huds.	163
<i>pectinatus</i> , L.	535	<i>pedunculata</i> , Willd.	468	<i>collina</i> , Sm.	162
<i>pusillus</i> , L.	535	<i>Robur</i> , L.	468	<i>canina</i> , L.	162
<i>POTENTILLA</i> , L.	151	<i>Robur</i> , L.	468	<i>micrantha</i> , Sm.	162
<i>anserina</i> , L.	151	<i>sessilifolia</i> , Salisb.	468	<i>pimpinellifolia</i> , L.	161
<i>Comarum</i> , Nestl.	153	<i>RADIOLA</i> , Dillen.	79	<i>rubiginosa</i> , L.	162
<i>Fragariastrum</i> ,		<i>millegrana</i> , Sm.	79	<i>scabriuscula</i> ,	
<i>Ehrh.</i>	152	<i>RANUNCULUS</i> , L.	5	<i>Winch.</i>	161
<i>reptans</i> , L.	151	<i>acris</i> , L.	9	<i>spinosissima</i> , L.	161
<i>Tormentilla</i> , With.	151	<i>aquatilis</i> , L.	6, 638	<i>systyla</i> , Bast.	162
<i>POTERIUM</i> , L.	149	<i>arvensis</i> , L.	11	<i>tomentosa</i> , Sm.	161
<i>muricatum</i> , Spach.	150	<i>auricomus</i> , L.	8	<i>Rottboellia filiformis</i> ,	
<i>Sanguisorba</i> , L.	149	<i>bulbosus</i> , L.	10	<i>Roth</i>	623
<i>Prenanthes muralis</i> , L.	286	<i>circinatus</i> , Sm.	6	<i>incurvatus</i> , L.	623
<i>PRIMULA</i> , L.	395	<i>cœnosus</i> , Guss.	638	<i>RUBIA</i> , L.	236
<i>elatior</i> , With.	398	<i>Ficaria</i> , L.	7	<i>peregrina</i> , L.	236
<i>veris</i> , L.	397	<i>Flammula</i> , L.	7	<i>sylvestris</i> , Brot.	236
<i>vulgaris</i> , Huds.	396	<i>fluitans</i> , Lam.	638	<i>RUBUS</i> , L.	154
<i>PRUNELLA</i> , L.	382	<i>bederaceus</i> , L.	6	<i>apiculatus</i> , W. & N.	159
<i>vulgaris</i> , L.	382	<i>hederaceus</i> , L.	638	<i>argenteus</i> , W. & N.	157
<i>PRUNUS</i> , L.	138	<i>hirsutus</i> , Curt.	10	<i>Bellardi</i> , W. & N.	159
<i>acida</i> , Ehrh.	144	<i>Lenormandi</i> ,		<i>Borreri</i> , Bell-Salt.	157
<i>austera</i> , Ehrh.	144	<i>Schultz</i>	638	<i>cæsius</i> , L.	160
<i>avium</i> , L.	142	<i>Lingua</i> , L.	7	<i>cæsius</i> , L.	160
<i>caproniana</i> , Host.	144	<i>pantothrix</i> , DC.	6	<i>carpinifolius</i> ,	
<i>Cerasus</i> , L.	144	<i>parviflorus</i> , L.	10	<i>W. & N.</i>	156
<i>Cerasus</i> , Sm.	142	<i>Philanotis</i> , Ehrh.	10	<i>cordifolius</i> , W. & N.	155
<i>communis</i> , Huds.	138, 140	<i>repens</i> , L.	9	<i>corylifolius</i> , Sm.	156
<i>domestica</i> , L.	138	<i>sceleratus</i> , L.	9	<i>discolor</i> , W. & N.	157
<i>insititia</i> , L.	138	<i>RAPHANUS</i> , L.	46	<i>dumetorum</i> ,	
<i>Padus</i> , L.	141	<i>maritimus</i> , Sm.	47	<i>W. & N.</i>	160
<i>rubra</i> , Willd.	141	<i>Raphanistrum</i> , L.	46	<i>fastigiatus</i> , Bab.	156
<i>spinosa</i> , L.	140	<i>RESEDA</i> , L.	48	<i>fruticosus</i> , Sm.	157
<i>sylvestris</i> , Loud.	143	<i>alba</i> , L.	50	<i>fusco-ater</i> , W. & N.	159
<i>PTERIS</i> , L.	634	<i>fruticulosa</i> , L.	50	<i>fuscus</i> , W. & N.	159
<i>aquilina</i> , L.	634	<i>Luteola</i> , L.	48	<i>glandulosus</i> ,	
<i>PULICARIA</i> , Gærtn.	255			<i>Bellardi</i>	159
<i>dysenterica</i> , Gærtn.	255			<i>Grabowskii</i> , Weihe	160
<i>vulgaris</i> , Gærtn.	255			<i>Hystrix</i> , W. & N.	158
				<i>idæus</i> , L.	154

	Page		Page		Page
Köhleri, W.	159	<i>nodosa</i> , Fenzl.	67	<i>Anthriscus</i> , Sm.	221
<i>Leightonii</i> , Lees	158	<i>procumbens</i> , L.	66	<i>Pecten</i> , L.	220
<i>Lejeunii</i> , W. & N.	159	<i>procumbens</i> , L.	67	SCHLEBROCHLOA,	
<i>leucostachys</i> , Sm.	157	<i>subulata</i> , Wimm.	67	<i>P-de-Beauv.</i>	599
<i>macro-acanthus</i> ,		SALICORNIA, L.	421	Borreri, Bab.	600
W. & N.	157	<i>annua</i> , Sm.	422	<i>distans</i> , Bab.	601
<i>macrophyllus</i> ,		<i>herbacea</i> , L.	422	<i>loliacea</i> , Woods	599
W. & N.	155	<i>procumbens</i> , Sm.	422	<i>maritima</i> , Lind.	600
<i>nemorosus</i> , Hayne	160	<i>radicans</i> , Sm.	422	<i>procumbens</i> ,	
<i>nitidus</i> , W. & N.	155	SALIX, L.	454	Beauv.	599
<i>plicatus</i> , W. & N.	155	<i>acuminata</i> , Sm.	457	<i>rigida</i> , Link	599
<i>Radula</i> , W.	158	<i>alba</i> , L.	456	SCHOBERIA, C. A.	
<i>Reichenbachii</i> ,		<i>aquatica</i> , Sm.	458	Meyer	414
W. & N.	158	<i>ascendens</i> , Sm.	456	<i>fruticosa</i> , Less.	415
<i>rhamnifolius</i> ,		<i>aurita</i> , L.	459	<i>maritima</i> , Mey.	414
W. & N.	155	<i>bicolor</i> , Sm.	460	<i>Schœnus Mariscus</i> ,	
<i>Salteri</i> , Bab.	156	<i>caprea</i> , L.	459	L.	540
<i>Schlechtendalii</i> ,		<i>cinerea</i> , L.	458	<i>alba</i> , L.	542
W & N	156	<i>Forsteriana</i> , Sm.	460	SCILLA, L.	503
<i>Sprengelii</i> , W.	157	<i>fragilis</i> , L.	455	<i>autumnalis</i> , L.	503
<i>suberectus</i> , And.	154	<i>fusca</i> , L.	456	<i>fallax</i> , Steinh.	503
<i>sylvaticus</i> , W. & N.	155	<i>laurina</i> , Sm.	460	<i>nutans</i> , Sm.	504
<i>tenuis</i> , Bell-Salt.	160	<i>mollissima</i> , Sm.	457	<i>verna</i> , Huds.	504
<i>thyrsoides</i> , Wimm.	157	<i>oleifolia</i> , Sm.	458	SCIRPUS, L.	543
<i>vestitus</i> , W. & N.	158	<i>rugosa</i> , Bab.	457	<i>filiformis</i> , Sav.	544
<i>villicaulis</i> , W. & N.	155	<i>Smithiana</i> , Willd.	457	<i>fluitans</i> , L.	543
<i>vulgaris</i> , W. & N.	158	<i>sphacelata</i> , Sm.	459	<i>glaucus</i> , Sm.	545
<i>Wahlbergii</i> , Arrh.	159	<i>triandra</i> , L.	455	<i>leptaleus</i> , Koch	544
RUMEX, L.	428	<i>viminialis</i> , L.	457	<i>maritimus</i> , L.	546
<i>Acetosa</i> , L.	431	<i>vitellina</i> , Auct.	456	<i>multicaulis</i> , Sm.	542
<i>Acetosella</i> , L.	431	SALSOLA, L.	413	<i>palustris</i> , L.	542
<i>acutus</i> , Sm.	429	<i>Kali</i> , L.	413	<i>pauciflorus</i> , Lightf.	543
<i>aquaticus</i> , Sm.	428	SALVIA, L.	375	<i>Savii</i> , S. et M.	544
<i>conglomeratus</i> ,		<i>pratensis</i> , L.	375	<i>setaceus</i> , L.	544
Murr.	429	<i>verbenaca</i> , L.	376	<i>sylvaticus</i> , L.	546
<i>crispus</i> , L.	430	SAMBUCUS, L.	228	<i>Tabernæmontani</i> ,	
<i>Hydrolapathum</i> ,		<i>Ebulus</i> , L.	230	Gmel.	545
Huds.	428	<i>nigra</i> , L.	228	SCLERANTHUS, L.	183
<i>maritimus</i>	430	<i>rotundifolia</i> , DC.	228	<i>annuus</i> , L.	183
<i>Nemolapathum</i> ,		SAMOLUS, L.	407	SCOLOPENDRIUM, Sm.	633
Wahl.	429	<i>Valerandi</i> , L.	407	<i>Ceterach</i> , L.	629
<i>obtusifolius</i> , L.	430	SANICULA, L.	194	<i>vulgare</i> , Sym	633
<i>pratensis</i> , M. & K.	430	<i>europæa</i> , L.	195	SCROPHULARIA, L.	342
<i>pulcher</i> , L.	429	<i>Santolina maritima</i> ,		<i>aquatica</i> , L.	343
<i>sanguineus</i> , L.	429	L.	265	<i>nodosa</i> , L.	342
RUPPIA, L.	536	SAPONARIA, L.	61	SCUTELLARIA, L.	382
<i>maritima</i> , L.	536	<i>officinalis</i> , L.	61	<i>galericulata</i> , L.	382
RUSCUS, L.	508	SAROTHAMNUS,		<i>minor</i> , L.	384
<i>aculeatus</i> , L.	508	Wimm.	110	SEDUM, L.	184
		<i>scoparius</i> , Wimm.	110	<i>acre</i> , L.	186
SAGINA, L.	66	<i>Satyrium viridis</i> , L.	480	<i>album</i> , L.	184
<i>apetala</i> , L.	66	SAXIFRAGA, L.	192	<i>anglicum</i> , Huds.	185
<i>apetala</i> , Wahl.	67	<i>tridactylites</i> , L.	192	<i>dasyphyllum</i> , L.	185
<i>cerastoides</i> , Sm.	73	SCABIOSA, L.	246	<i>glaucum</i> , Don	186
<i>ciliata</i> , Fries	639	<i>arvensis</i> , L.	246	<i>reflexum</i> , L.	186
<i>erecta</i> , L.	68	<i>Columbaria</i> , L.	246	<i>Telephium</i> , L.	184
<i>maritima</i> , Don	67	<i>succisa</i> , L.	246	SEMPERVIVUM, L.	186
		SCANDIX, L.	220	<i>tectorum</i> , L.	186

	Page		Page		Page
<i>Senebiera Coronopus</i> , DC.	44	<i>Virgaurea</i> , L.	250	<i>TAMARIX</i> , L.	180
<i>didyma</i> , Sm.	44	<i>SONCHUS</i> , L.	285	<i>gallica</i> , L.	180
<i>SENECIO</i> , L.	251	<i>arvensis</i> , L.	285	<i>TAMUS</i> , L.	505
<i>aquaticus</i> , Huds.	252	<i>asper</i> , Hoffm.	285	<i>communis</i> , L.	506
<i>campestris</i> , DC.	252	<i>oleraceus</i> , L.	285	<i>TANACETUM</i> , L.	265
<i>erucifolius</i> , L.	251	<i>Sorbus aucuparia</i> , Sm.	168	<i>vulgare</i> , L.	265
<i>Jacobæa</i> , L.	252	<i>SPARGANIUM</i> , L.	531	<i>TARAXACUM</i> , Hall	284
<i>sylvaticus</i> , L.	251	<i>erectum</i> , L.	531	<i>officinale</i> , Wigg.	284
<i>tenuifolius</i> , Jacq.	252	<i>natans</i> , L.	532	<i>TAXUS</i> , L.	472
<i>vulgaris</i> , L.	251	<i>ramosum</i> , Huds.	531	<i>baccata</i> , L.	472
<i>Serapias grandiflora</i> , L.	491	<i>simplex</i> , Huds.	531	<i>TEUCRUM</i> , L.	392
<i>latifolia</i> , L.	489	<i>SPARTINA</i> , Schreb.	624	<i>Chamædrys</i> , L.	392
<i>longifolia</i> , L.	490	<i>stricta</i> , Roth	624	<i>Scorodonia</i> , L.	392
<i>palustris</i> , Scop.	490	<i>Spartium scoparium</i> , L.	110	<i>THALICTRUM</i> , L.	3
<i>Serrafalcus mollis</i> , Pail.	611	<i>SPECULARIA</i> , Heister	293	<i>flavum</i> , L.	3
<i>commutatus</i> , Bab.	611	<i>hybrida</i> , Alph.DC.	293	<i>THESIUM</i> , L.	438
<i>SERRATULA</i> , L.	275	<i>SPIERGULA</i> , L.	67	<i>humifusum</i> , DC.	438
<i>tinctoria</i> , L.	275	<i>arvensis</i> , L.	68	<i>linophyllum</i> , L.	438
<i>SHERARDIA</i> , L.	241	<i>nodosa</i> , L.	67	<i>THLASPI</i> , L.	41
<i>arvensis</i> , L.	241	<i>pentandra</i> , Sm.	68	<i>arvense</i> , L.	41
<i>SILAU</i> , Besser.	211	<i>subulata</i> , Sw.	67	<i>hirtum</i> , Sm.	43
<i>pratensis</i> , Bess.	211	<i>Spergularia marina</i> , Camb.	76	<i>THEINCIA</i> , Roth	279
<i>SILENE</i> , L.	61	<i>rubra</i> , St. Hil.	76	<i>hirta</i> , Roth	279
<i>anglica</i> , L.	63	<i>SPIRÆA</i> , L.	147	<i>THYMUS</i> , L.	377
<i>inflata</i> , Sm.	61	<i>Filipendula</i> , L.	147	<i>Acinos</i> , Clairv.	378
<i>maritima</i> , With.	62	<i>Ulmaria</i> , L.	148	<i>Calamintha</i> , Sm.	380
<i>noctiflora</i> , L.	63	<i>SPIRANTHES</i> , Rich.	486	<i>Serpyllum</i> , L.	377
<i>nutans</i> , L.	62	<i>æstivalis</i> , Rich.	486	<i>vulgaris</i> , L.	378
<i>paradoxa</i> , Sm.	62	<i>autumnalis</i> , Rich.	486	<i>TILIA</i> , L.	83
<i>SILYBUM</i> , Gærtn.	274	<i>STACHYS</i> , L.	389	<i>Europea</i> , L.	84
<i>marianum</i> , Gærtn.	274	<i>ambigua</i> , Sm.	390	<i>microphylla</i> , Vent.	83
<i>SINAPIS</i> , L.	37	<i>arvensis</i> , L.	390	<i>parvifolia</i> , Ehrh.	83
<i>alba</i> , L.	38	<i>Betonica</i> , Benth.	390	<i>TORILIS</i> , Adans.	216
<i>arvensis</i> , L.	38	<i>palustris</i> , L.	390	<i>Anthriscus</i> , Gærtn.	216
<i>nigra</i> , L.	37	<i>sylvatica</i> , L.	390	<i>infesta</i> , Spr.	217
<i>SISON</i> , L.	201	<i>STATICE</i> , L.	408	<i>nodosa</i> , Gærtn.	218
<i>Amomum</i> , L.	201	<i>Armeria</i> , L.	410	<i>Tormentilla officinalis</i> , L.	151
<i>inundatum</i> , Sm.	200	<i>binervosa</i> , Sm.	409	<i>reptans</i> , L.	151
<i>segetum</i> , L.	199	<i>cordata</i> , Sm.	409	<i>TRAGOPOGON</i> , L.	281
<i>SISYMBRIUM</i> , L.	35	<i>Limonium</i> , L.	408	<i>minor</i> , Fries	281
<i>Erysimum</i> , L.	35	<i>Limonium</i> , Sm.	409	<i>porrifolius</i> , L.	282
<i>Nasturtium</i> , L.	30	<i>rariflora</i> , Dreij.	408	<i>pratensis</i> , L.	281
<i>officinale</i> , Scop.	35	<i>spathulata</i> , Desf.	409	<i>TRIFOLIUM</i> , L.	118
<i>terrestre</i> , Sm.	30	<i>STELLARIA</i> , L.	68	<i>arvense</i> , L.	118
<i>thalianum</i> , Gaud.	35	<i>alsinoides</i> , Schlei.	69	<i>filiforme</i> , L.	124
<i>Sium</i> , L.	203	<i>graminea</i> , L.	69	<i>fragiferum</i> , L.	123
<i>angustifolium</i> , L.	203	<i>graminea</i> , L.	70	<i>glomeratum</i> , L.	120
<i>nodiflorum</i> , L.	200	<i>holostea</i> , L.	69	<i>incarnatum</i> , L.	124
<i>repens</i> , L.	200	<i>media</i> , With.	68	<i>medium</i> , L.	118
<i>SMYRNICUM</i> , L.	196	<i>uliginosa</i> , Murr.	70	<i>micranthum</i> , Viv.	124
<i>Olusatrum</i> , L.	196	<i>Suaeda maritima</i> , Dumort.	414	<i>minus</i> , Sm.	124
<i>SOLANUM</i> , L.	327	<i>SYMPHYTUM</i> , L.	321	<i>officinalis</i> , Sm.	116
<i>Dulcamara</i> , L.	327	<i>officinale</i> , L.	321	<i>ornithopodioides</i> , L.	117
<i>nigrum</i> , L.	328	<i>patens</i> , Sibth.	321	<i>pratense</i> , L.	118
<i>SOLIDAGO</i> , L.	250			<i>procumbens</i> , L.	124
				<i>repens</i> , L.	118

	Page		Page		Page
scabrum, L.	120	vulgaris, L.	395	gracilis, Lois.	130
striatum, L.	119			hirsuta, Koch	129
subterraneum, L.	122	VACCINIUM, L.	297	lathyroides, L.	128
suffocatum, L.	121	Myrtillus, L.	297	laxiflora, Brot.	130
<i>Trifolium</i> , L.	117	Oxycoccus, L.	298	Mitchellii, Raf. Ell.	129
TRIGLOCHIN, L.	524	<i>Valantia Aparine</i> , L.	240	sativa, L.	128
maritimum, L.	524	VALERIANA, L.	242	sepium, L.	127
palustre, L.	525	dentata	244	sylvatica, L.	126
<i>Trigonella ornithopo-</i>		dioica, L.	243	tetrasperma,	
<i>dioides</i> , DC.	117	Locusta, L.	243	Mœnch.	129
TRIODIA, Br.	595	mixta, Wihl.	244	VILLARSIA, Vent.	312
decumbens, Beauv.	595	Morisonii, DC.	244	nymphæoides,	
<i>Tripolium vulgare</i> ,		officinalis, L.	242	Vent.	312
Nees	249	ruber, L.	242	VINOCA, L.	304
<i>Trisetum flavescens</i> ,		VERBASCUM, L.	334	herbacea, W.	308
Beauv.	614	Blattaria, L.	336	major, L.	305
<i>pratensis</i> , Parn.	614	nigrum, L.	335	minor, L.	306
<i>pubescens</i> , Parn.	614	thapsiforme,		VIOLA, L.	51
TRITICUM, L.	618	Schreb.	334	arvensis, Murr.	55
juncum, L.	619	Thapsus, L.	334	canina, L.	54, 639
<i>loliaceum</i> , Sm.	599	VERBENA, L.	393	<i>flavicornis</i> , Sm.	55, 639
repens, L.	619	officinalis, L.	393	hirta, L.	51
TULIPA, L.	500	VERONICA, L.	337	lactea, Sm.	55
sylvestris, L.	500	agrestis, L.	340	<i>Martia alba</i> , Ray.	52
<i>Turritis hirsuta</i> , L.	33	agrestis, Sm.	341	odorata, L.	52
TUSSILAGO, L.	248	Anagallis, L.	337	palustris, L.	53
Farfara, L.	248	arvensis, L.	339	tricolor, L.	55
TYPHA, L.	529	Beccabunga, L.	337	Viscum, L.	227
angustifolia, L.	530	Buxbaumii, Ten.	341	album, L.	227
latifolia, L.	529	Chamædryas, L.	337	<i>Vulpia bromoides</i> ,	
		hederaefolia, L.	340	Dumort.	605
ULEX, L.	109	montana, L.	337	<i>Myurus</i> , Gmel.	605
europæus, L.	109	officinalis, L.	339	<i>Pseudo-Myurus</i> ,	
nanus, T. F. Forst.	110	polita, Fries	341	Reich.	605
ULMUS, L.	451	scutellata, L.	339	<i>uniglumis</i> , Dumort.	606
<i>campestris</i> , L.	452, 453	serpyllifolia, L.	339		
glabra, Mill	452	VIBURNUM, L.	231	WAHLENBERGIA,	
montana, Sm.	453	edule, Prush.	232	Schrader	294
suberosa, Ehrh.	452	Lantana, L.	233	hederacea, Rehb.	294
<i>suberosa</i> , Ehrh.	453	Opulus, L.	231		
URTICA, L.	448	Oxycoccus, Pursh.	232	ZANNICHELLIA, L.	536
dioica, L.	448	VICIA, L.	126	palustris, L.	536
urens, L.	448	angustifolia, Roth	128	ZOSTERA, L.	537
UTRICULARIA, L.	395	Bobartii, Forst.	128	marina, L.	537
minor, L.	395	Cracca, L.	127	nana, Roth	537

ENGLISH INDEX

TO THE

POPULAR AND LOCAL GENERIC AND SPECIFIC NAMES.

N.B.—Such Genera as have no appropriate English name are not inserted in the present, but only in the Latin Index.

	<i>Page</i>		<i>Page</i>		<i>Page</i>
Abele	. 460	Bacchobolts	. 529	Bindweed (Black)	. 435
Aconite	. 17	Barberry	. 18	Birch	. 464
Adder's-tongue	. 636	Barley-grass	. 616	Bird Cherry	. 141
Agrimony	. 150	Barren Strawberry	. 152	Bird's Eyes	. 337
— Hemp	. 247	Base Rocket	. 49	Bird's Foot	. 135
Alder	. 465	Basil Thyme	. 378	— Trefoil	. 117
— Berry-bearing	. 107	— Wild	. 381	Bird's Nest	. 214, 296, 488
— Black	. 107	Bastard Stone Pars-		Bistort	. 432
— Buckthorn	. 107	ley	. 201	Bitter Cress	. 34
Alehoof	. 385	— Pimpernel	. 405	Bittersweet	. 327
Alexanders	. 196	— Toad Flax	. 438	Bitter Vetch	. 134
Alkanet (Evergreen)	. 320	Beaked Parsley	. 221	Black Alder	. 107
— Bastard	. 325	Beak Rush	. 541	Blackamoors	. 529
Allseed	. 416	Bedstraw	. 238	Blackberry	. 155
— Goosefoot	. 416	Bedvine	. 2	Black Bryony	. 506
Alyssum	. 39	Bee Flower	. 483	— Horehound	. 391
Anemone	. 4	Bee Orchis	. 483	— Mustard	. 37
Angelica	. 213	Beech	. 469	— Saltwort	. 408
Apple	. 164	Beet	. 421	Blackthorn	. 140
Apse	. 461	Belder Root	. 208	Bladderwort	. 365
Archangel	. 386	Bell Flower	. 290	Bladderwort Campion	. 61
Arrow-grass	. 524	Bent Grass	. 585	Blinks	. 182
Ash	. 303	Berry-bearing Alder	. 107	Blue Bell	. 504
— Mountain	. 168	Betony	. 390	Blue Bottle	. 276, 504
Asparagus	. 507	— Paul's	. 339	Blue Cowslip	. 322
Aspen	. 461	— Water	. 343	Bog Asphodel	. 510
Asphodel (Bog)	. 510	Bilberry	. 297	— Pimpernel	. 404
Avens	. 149	Bindweed	. 312	— Rush	. 514

	Page		Page		Page
Borage	. 320	Catchweed	. 240	Couch Grass	. 619
Bothen	. 259	Cat Mint	. 384	Cow Grass	. 118
Bozzom	. 259	Cat's Ear	. 278	— Parsley	. 221
Brake	. 634	Cat's Tail	. 529	Cow Parsnep	. 214
Bramble	. 154	Cat's Tail Grass	. 582	Cowslip	. 397
Brank	. 436	Celandine (Sea)	. 24	— Blue	. 322
Briar	. 160	— Lesser	. 7	— Jerusalem	. 322
Broad Clover	. 118	— Common	. 25	— Paigle	. 397
Brome Grass	. 608	Celery	. 197	Cow-wheat	. 354
Brooklime	. 337	Centauray	. 309	Crab Apple	. 165
Brookweed	. 407	— Yellow	. 308	Crauberry	. 298
Broom	. 110	Ceterach	. 628	— Common	. 298
Broom Rape	. 362	Chaffweed	. 405	Crane's Bill	. 96
Bryony	. 180, 505	Chamomile	. 261	Cress	. 30
— Black	. 506	— Wild	. 261	— Bitter	. 34
Buckbean	. 312	Charlock	. 38	— Marsh	. 30
Buckthorn	. 106	— Jointed	. 46	— Rock	. 33
Buckwheat	. 436	Cheat	. 622	— Swine's	. 30
— Climbing	. 435	Cherry	. 138	— Wart	. 44
Bugle	. 392	Chervil	. 220	— Water	. 30
Bugloss	. 321	Chestnut	. 471	— Winter	. 31
— Viper's	. 321	— Oak	. 468	— Yellow	. 30
Bullace	. 138	Chickweed	. 68	Crosswort	. 238
Bullock's Lungwort	. 334	— Sand	. 67	Crowfoot	. 5, 638
Bullrattles	. 61	— Sea	. 74	Crow Garlic	. 502
Bullrush (Lesser)	. 545	Christmas	. 300	— Needles	. 220
Burdock	. 270	Cinquefoil	. 151	Cuckoo Babies	. 526
Burnet	. 149	Clary	. 375	— Flower	. 34
— Salad	. 149	Cleavers	. 240	— Pint	. 526
— Saxifrage	. 202	Cliver	. 240	Cudweed	. 256
Bur Marigold	. 268	— Evergreen	. 236	Currant	. 188
— Nod-		Clover		Cyperus Grass	. 538
— ding	. 268	— Yellow	. 124		
Bur Reed	. 531	Club Rush	. 543	Daffodil	. 496
Bush Vetch	. 127	Cockle	. 65	Daisy	. 257
Butcher's Broom	. 508	— Corn	. 65	Dame's Violet	. 35
Butter Bur	. 249	Cock's-foot Grass	. 596	Dandelion	. 284
Buttercup	. 10	Cock's Head	. 137	Danewort	. 230
Butterfly Orchis	. 480	Codlings and Cream	. 171	Darnel	. 621
Butterwort	. 394	Coleseed	. 37	Dead Nettle	. 385, 639
		Colewort (Sea)	. 48, 315	Deadly Nightshade	. 329
Cabbage	. 36	Colt's-foot	. 248	Deer's-foot Grass	. 586
Calamint	. 378	Columbine	. 15	Devil's-bit Scabious	. 246
Calve's Snout	. 344	Comfrey	. 321	Devil's Claws	. 11
Cammock	. 113	Copse Laurel	. 436	Dewberry	. 160
Campion	. 64	Cord Grass	. 624	Dock	. 428
— Red	. 64	Cornel	. 225	Dodder	. 316
— White	. 64	Corn Chamomile	. 262	Dog Rose	. 162
Canary Grass	. 588	— Cockle	. 65	Dog Violet	. 54, 639
Caper Spurge	. 444	— Flower	. 293	Dog's Mercury	. 445
— Bush	. 444	— Marigold	. 259	Dog's-tail Grass	. 596
Carline Thistle	. 269	— Rose	. 22	Dogwood	. 225
Carrot	. 214	— Salad	. 243	Dropwort	. 147
Catchfly	. 61	Corydalis (Climbing)	. 27	Duckweed	. 533
— English	. 63	Cotton Grass	. 547	Dutch Clover	. 118
— Night-flower-		Cotton Thistle	. 273	— Myrtle	. 466
— ing	. 63	Cotton Weed	. 265	Dwale	. 329
		— Sea	. 265		

	Page		Page		Page
Dwarf Elder	230	Foxglove	343	Grass, Melic	592
— Cistus	50	Fox-tail Grass	579	— Nit	583
Dyer's Greenweed	111	French Cress	31	— Quaking	602
— Rocket	48	Frogbait	474	— Rabbit	586
— Weed	48	Frog Orchis	480	— Ray	621
		Fumitory	26	— Squirrel-tail	617
		— Rampant	26	— Timothy	582
Earth Nut	202	— Common	27	— Totter	602
Eglantine	162	— Small-		— Vetch	133
Elder	228	flowered	27	Grass Wrack	537
— Ground	230	Furze	109	Greenweed	111
— Water	231			Gray Mill or Millet	324
Elecampane	253	Gale	466	Gromwells	324
Elm	451	Galingale (English)	539	Ground Elder	202
— Wych	453	Gardener's Garters	588	— Fern	630
Enchanter's Night-		Garlic	502	— Ivy	385
shade	174	— Mustard	36	Groundsel	251
Endive (Wild)	277	— Treacle Mus-		Guelder Rose	231
English Galingale	539	tard	36	Gymnadenia	479
Eryngo	193	Gentian	310		
Euphrasy	361	Germander Speedwell	337	Habenaria	480
Evening Primrose	173	— Wall	392	Hair Grass	589
Evergreen Alkanet	320	Gill (Alehoof)	385	Hard Fern	634
— Cleaver	236	Gilliflower	28	Hard Grass	622
Everlasting Pea	132	Gipsywort	374	Harebell	292
Eyebright	361	Gipsy Onion	502	Hare's Ear	203, 639
		— Rose	246	Hare's-foot Trefoil	118
		Gladwyn	494	Hart's Tongue	633
Fair Maids of Febru-		Glasswort	421	Hasel	467
ary	496	Goat's Beard	281	Hawkbait	280
False Brome Grass	620	Golden Osier	466	Hawk's Beard	284
— Oat Grass	594	Golden Rod	250	Hawkweed	287
Female Fern	633	Golden Samphire	254	Hawthorn	163
Fennel	210	Golden Saxifrage	193	Heart Medick	115
Ferns	628	Golden Withy	466	Heart's-ease	55
Fescue Grass	605	Goldilocks	8	Heath	296
Feverfew	260	Good King Henry	420	— Bell	292
Fiddle Cases	360	Gooseberry	188	— Grass	595
Fiddle Dock	429	Goosecorn	515	Hedge Lily	314
Field Madder	241	Goose Foot	415	— Mustard	35
— Larkspur	17	Goose Grass	240	— Parsley	216
Figwort	342	Goose Tongue	264	Hellebore	13
Filago	257	Gorse	109	— Green	13
Five-fingered Grass	151	Go-to-Bed-at-Noon	281	— Stinking	14
Flag	493	Goutweed	201	Helleborine	489
Flannel Plant	334	Grass	577	Hemlock	195
Flax	77	— Bent	585	— Lesser	209
— Seed	79	— Black	581	— Water Drop-	
Fleabane	250, 255	— Brome	608	wort	208
Flea Sedge	550	— Cat's-tail	582	Hemp Agrimony	247
Fleawort	252	— Cock-foot	596	Hemp Nettle	389
Flower de Luce	493	— Couch	619	Henbane	330
Flowering Fern	635	— Deer's-foot	586	Henbit	386
Flowering Rush	522	— Dog's-tail	596	— Dead Nettle	386
Fluellin	352	— Fescue	605	Herb Bennet	149
Fly Orchis	485	— Fox-tail	579	— Gerard	202
Fool's Parsley	209	— Mat	579	— Mercury	445
Forget-me-not	325	— Meadow	596		

	Page		Page		Page
Herb Robert	. 96	Lady's Mantle	. 151	Marsh Pennywort	. 195
— Twopence	. 402	— Seal	. 506	— Trefoil	. 312
High Taper	. 334	— Smock	. 34	Marshwort	. 200
Hoghails	. 163	— Tresses	. 486	Mat Grass	. 579
Hogweed	. 214	Lamb's Lettuce	. 243	May	. 163
Holly	. 300	— Quarters	. 417	Mayweed	. 263
— Knee	. 508	Lancashire Asphodel	. 510	Meadow Clary	. 375
Holm	. 300	Land Cress	. 32	— Grass	. 596
Honeysuckle	. 235	Larkspur	. 17	— Rue	. 3
Horehound	. 391	Laurel	. 436	— —sweet	. 148
— Black	. 391	Lesser Bullrush	. 545	— Vetchling	. 132
— Stinking	. 391	— Celandine	. 7	— Thistle	. 273
— Water	. 374	— Dodder	. 318	Mealy Guelder Rose	. 233
— White	. 391	— Hemlock	. 209	Medick	. 114
Hornwort	. 178	— Snapdragon	. 346	Melick Grass	. 592
Horned Pondweed	. 536	— Stitchwort	. 69	Melilot	. 116
Horned Poppy	. 24	Lettuce	. 286	Mercury (Dog's)	. 445
Hooded Milfoil	. 395	— Lamb's	. 243	— English	. 420
Hop	. 449	Lily (Hedge)	. 314	— French	. 446
— Trefoil	. 124	Lime	. 83	Merry Tree	. 142
Horse Mint	. 371	Linden Tree	. 83	Mezereon	. 438
— Radish	. 41	Ling	. 297	Mignonette (Wild)	. 49
Horse-shoe Vetch	. 136	Lint	. 77	Milfoil	. 264
Horse Tail	. 626	Liquorice (Wild)	. 125	— Water	. 175
Hound's Tongue	. 319	Livelong Orpine	. 184	Milk Thistle	. 274
House Leek	. 186	Lords and Ladies	. 526	— Vetch	. 125
Hulver	. 300	Loosestrife	. 400	Milkwort	. 57
Hurdleberry or Hur-		— Purple	. 178	Millet Grass	. 584
tleberry	. 297	Lousewort	. 357	Mill Mountain	. 78
Hyacinth	. 504	Love in Idleness	. 55	Mint	. 371
		Lucern	. 114	— Cat	. 384
		Lungwort	. 322	— Corn	. 373
		— Bullock's	. 334	— Horse	. 372
		Lychnis	. 64	— Pepper	. 372
				— Spear	. 372
				Misseltoe	. 227
		Madder	. 236	Mithridate Mustard	. 41
		— Field	. 241	Mœnchia	. 68
		— Wild	. 236	Molinia	. 593
Jack-by-the-Hedge	. 36	Maidenhair	. 318	Moneywort	. 402
Jointed Charlock	. 46	Maiden Oak	. 468	Monk's-hood	. 18
— Glasswort	. 422	Male Fern	. 631	Moon Daisy	. 259
Juniper	. 473	Mallow	. 80	Moonwort	. 636
		— Marsh	. 82	Morello Cherry Tree	. 144
		— Musk	. 81	Morgin	. 263
Kale	. 48	— Tree	. 83	Moschatel	. 224
Kettle Cases	. 476	Mandrake	. 180	Moth Mullein	. 336
Kidney Vetch	. 114	Maple	. 93	Mother of Thyme	. 377
Kipper Nut	. 202	— Sycamore	. 94	Mountain Ash	. 168
Knapweed	. 275	Mare's Tail	. 174	Mouse Barley	. 616
Knautia	. 245	Marigold (Corn)	. 259	— — Chickweed	. 71
Knawel	. 183	— Marsh	. 12	— Hawkweed	. 287
Knee Holly	. 508	Marjoram	. 377	Mouse Tail	. 12
— Holm	. 508	Marram	. 512	Mudwort	. 12
Knot Grass	. 434	Marsh Cinquefoil	. 152	Mugwort	. 266
Koniga (Sea-side)	. 39	Marsh Fern	. 630	Mullein	. 334
Lady Fern	. 633	— Mallow	. 82	— — Moth	. 336
Lady's Fingers	. 114	— Marigold	. 12	Murrain Berries	. 506

	Page		Page		Page
Musk Mallow	81	Pansy	55	Poor Man's Weather-	
— Orchis	478	Park Leaves	84	Glass	403
— Thistle	270	Parnassus (Grass of)	93	Poplar	460
Musky Stork's Bill	101	Parsley	198	Poppy	20, 343
Mustard	37	— Bastard Stone	201	— Horned	24
— Garlic	36	— Beaked	221	— Opium	23
— Hedge	36	— Corn	199	— Sea	24
— Mithridate	41	— Fool's	209	Povertyweed	355
— White	38	— Garden	198	Prickwood	104
— Wild	38	— Hedge	216	Prim	302
Myrtle (Bog)	466	— Rough Cow	220	Primprint	302
— Dutch	466	— Smooth Cow	221	Primrose	395
		— Water Drop-		— Peerless	499
		wort	205	Print	302
Navelwort	186	Parsnep	213	Privet	302
Navev	37	— Cow	214	Purple Loosestrife	178
Needle Chervil	220	— Water	203	— Sandwort	76
— Greenweed	112	Paul's Betony	339	— Spurge	440
Nettle	448	Pea (Everlasting)	132	— Spurrey	76
— Dead	385, 639	Pear Tree	164	Purslane (Sea)	427
— Hemp	389	Pearlwort	66, 639	— Water	179
Nightshade	327	Pellitory of the Wall	449		
— — Deadly	329	Penny Cress	41	Quakers	602
— — Euchar-		Penny Royal	374	Quaking Grass	602
er's	174	Pennywort	42	Queen of the Mea-	
— — Garden	328	— Marsh	195	dows	148
— — Woody	327	— Wall	186	Quick	163
Nipplewort	277	Pepper (Wall)	186	Quicken Tree	168
Nit Grass	583	— Mint	372	Quickset	163
Nonesuch	115	— Saxifrage	211		
Nottingham Catchfly	62	Pepperwort	42		
Nut Tree	467	Periwinkle	304	Rabbit Grass	586
		Persian Willow	169	Radish	46
Oak	468	Persicaria	431	— Horse	41
Oak-leaved Goosefoot	417	Petty Spurge	443	— Wild	46
Oat or Oat Grass	612	— Whin	112	— Sea	47
Old Man's Beard	2	Pheasant's Eye	5	Ragged Robin	64
Onion (Gipsy)	502	Picris	282	Ragwort	251
Opium Poppy	23	Pignut	202	Ramsons	502
Orache	423, 640	Pilewort	7	Rape	37
Orchis	475	Pimpernel	403	— Broom	362
— Bee	483	— Bastard	405	Raspberries and	
— Butterfly	480	— Bog	404	Cream	247
— Fly	485	Pink	59	Raspberry	154
— Frog	480	— Deptford	60	Rattle Grass	602
— Spider	484	— Proliferous	60	— Red	358
Orpine	184	Pipple	461	— Yellow	360
Osier	457	Plantain	410	Ray Grass	621
— Golden	466	— Water	521	Red-berried Bryony	180
Osmund Royal	635	Pliant Mealy Tree	233	Red Clover	118
Ox Eye	259	Ploughman's Spike-		— Rattle	358
— Daisy	259	nard	254	— Valerian	242
Oxlip	399	Plum	138	— weed	22
Ox Tongue	283	Plume Thistle	271	Reed	614
		Polypody	629	Reed-mace	529
		Pondweed	534	Rest Harrow	113
		— Horned	536	Rib Grass	411
		Pondweed, Tassel	536		

	Page		Page		Page
Ribbon Grass	. 588	Sea Colewort	. 48, 315	Spindle Tree	. 104
Ribwort	. 411	— Heath	. 58	Spleenwort	. 632
— Plantain	. 411	— Holly	. 194	Spurflower	. 242
Roast-beef Plant	. 494	— Kale	. 48	Spurge	. 440
Rock Cress	. 33	— Lavender	. 408	— Laurel	. 436
Rocket	. 48	— Milkwort	. 406	Spurrey	. 67
— Base	. 49	— Pea	. 133	Squill	. 503
— Sea	. 45	— Pearlwort	. 67	Squinancy-wort	. 241
— Yellow	. 31	— Purslane	. 427	Squirrel-tail Grass	. 617
Rock Rose	. 50	— Reed	. 582	Star of Bethlehem	. 501
Roman Chamomile	. 261	— Rocket	. 45	— of the Earth	. 412
— Nettle	. 448	— Starwort	. 249	— Thistle	. 276
Rose	. 160	Sedge	. 549	Starwort	. 249
Rose of Sharon	. 86	Seg	. 549	— Water	. 176
Rose-hay Willow-herb	. 169	Selfheal	. 382	Stinking Crane's Bill	. 96
Roving Jenny	. 351	Sengreen	. 156, 306	— Chamomile	. 263
— Sailor	. 351	Service Tree (Wild)	. 164	— Hellebore	. 14
Rowan Tree	. 168	Setterwort	. 14	— Herb Robert	. 96
Rue (Meadow)	. 3	Shamrock	. 124	— Mayweed	. 263
— Wall	. 633	Sheep's-bit	. 295	Stink Tree	. 231
Rush	. 511	— Scabious	. 295	Stitchwort	. 68
— Beak	. 541	— Sorrel	. 431	Stock	. 28
— Club	. 543	Shepherd's Club	. 334	— Gilliflower	. 28
— Spike	. 542	— Needle	. 220	— Hoary Shrubby	. 28
— Twig	. 540	— Purse	. 44	Stonecrop	. 184
— Wood	. 516	— Pouches	. 363	— Biting	. 186
Rye Grass	. 621	Shield Fern	. 640	Stork's Bill	. 101
		Silverweed	. 151	— Musky	. 101
Sage	. 375	Simpler's Joy	. 393	Strawberry	. 153
Saintfoin	. 137	Skewerwood	. 104	Subterraneous Trefoil	. 122
St. Barnaby's Thistle	. 276	Skull-cap	. 382	Succory	. 277
St. John's-wort	. 86, 639	Sloe	. 138	Sundew	. 55
St. Peter's-wort	. 88	Smallage	. 198	Sunflower (Wild)	. 253
Salad Burnet	. 149	Smallreed	. 587	Sun Spurge	. 440
Sallow	. 458	Snake Fern	. 635	Swallow-wort	. 25
Salsafy	. 282	— Flower	. 322	Sweet Briar	. 162
Saltwort	. 413, 422	Snakeweed	. 432	— Crowfoot	. 8
— Black	. 406	Snapdragon	. 344	— Cyprus Grass	. 539
Samphire	. 212	Sneezewort Yarrow	. 264	— Gale	. 466
— Golden	. 254	Snowball Tree	. 232	— Violet	. 52
Sandwort	. 75	Snowdrop	. 496	— Withy	. 466
Sanicle	. 194	Soapwort	. 61	— Woodruff	. 240
Sauce-alone	. 36	Soft Grass	. 594	Swine's Cress	. 44
Saw-wort	. 275	Sorb Tree	. 166	Sycamore Maple	. 94
Saxifrage	. 192	Sorrel	. 431		
— Burnet	. 202	— Sheep's	. 431	Tansy	. 265
— Golden	. 193	— Wood	. 102	— Wild	. 151
Scabious	. 246	Southernwood (Sea)	. 267	Tare	. 126
— Sheep's	. 295	Sow Thistle	. 285	Tassel Pondweed	. 536
Scorpion Grass	. 325	Spanish Chestnut	. 471	Teasel	. 245
Scull-cap	. 382	Spatting Poppy	. 61	Thale Cress	. 35
Scurvy Grass	. 40, 315	Spear Mint	. 372	Thistle	. 270
— Scottish	. 315	— Thistle	. 271	— Carline	. 269
Sea Bindweed	. 315	— -wort	. 7	— Cotton	. 273
— Blite	. 414	Speedwell	. 337	— Milk	. 274
— Cabbage	. 36	Spider Orchis	. 484	— Musk	. 270
— Celandine	. 24	Spikenard	. 254	— Plume	. 271
		Spike Rush	. 542		

	Page		Page		Page
Thistle Spear	271	Wall-flower	29	— Chamomile	261
— St. Barnaby's	276	— Germander	392	— Chervil	221
— Star (Yellow)	276	— Hawkweed	288	— Endive	277
Thorn	163	— Lettuce	286	— Hyacinth	504
Thornapple	332	— Pellitory	449	— Liquorice	125
Thorow-wax	203	— Pennywort	186	— Mignonette	49
Thrift	409	— Pepper	186	— Navew	37
Thrinicia	279	— Rue	633	— Radish	46
Throatwort (Little)	291	— Speedwell	339	— Spinage	421
Thyme	377	Warlock	37	— Sunflower	253
Timothy Grass	582	Wart Cress	44	— Tansy	151
Toadflax	347, 438	Wartweed	443	— Teasel	245
— Bastard	438	Wartwort	440	— Thyme	377
Toothwort	369	Water Avens	149	— Vine	506
Tormentil	151	— Betony	343	Willow	454
Totter Grass	602	— Chickweed	182	— Crack	455
Traveller's Joy	2	— Crowfoot	6, 638	— French	169
Treacle Mustard	36	— Cress	30	— Persian	169
Tree Mallow	83	— Dropwort	204	— Sweet	466
— Sea-side	83	— Elder	231	Willow Herb	169, 639
Trefoil	118	— Gladiole	522	Winter Cress	30
— Bird's-foot	124	— Horehound	374	— Hecksies	140
— Hare's-foot	118	— Lily	19	Wireweed	434
— Hop	124	— Milfoil	175	Withy	454
— Marsh	312	— Parsnip	203	— Golden	466
— Zigzag	118	— Pimpernel	407	— Tame	169
Tulip	500	— Plantain	521	Wood Waxen	111
Tutsan	84	— Purslane	179	Wolf's-bane	17
Twayblade	487	— Speedwell	337	Wood Anemone	4
Twig Rush	540	— Starwort	176	— Betony	390
		Way Bennet	616	— Crowfoot	8
		— Bread	410	— Laurel	436
		— Thistle	272	— Loosestrife	402
Valerian	242	Wayfaring Tree	233	— Reed	587
Velvet Dock	253	Weasel Snout	388	— Rush	516
Venus's Comb	220	Wetted Thistle	270	— Sage	392
— Looking Glass	293	Wheat or Wheat Grass	618	— Sanicle	195
Vernal Grass	577	— Cow	354	— Sorrel	102
Vervain	393	Whin	109	— Spurge	442
Vetch	126	— Petty	112	— Strawberry	152
— Bitter	134	Whiperop	167, 233	Woodbine	235
— Horse-shoe	136	Whitebeam	167	Woodruff	240
Vetchling	132	White Horehound	391	Woody Nightshade	327
Violet	51	— Poppy	23	Wormwood	266
— Dame's	35	— Rice	167	Woundwort	389
— Dog	54, 639	— Rot	195	— Hedge	390
— Hairy	51	— Water Lily	19	— Marsh	390
— March	52	Whitethorn	163	Wyte Elm	453
— Marsh	53	Whitewort	260	— Hasel	453
— Sweet	52	Whitlow Grass	39		
Viper's Grass	322	Whittenbeam	167	Yarrow	264
Viper's Bugloss	322	Whorl Grass	588	Yellow Archangel	388
Virgin's Bower	2	Whortleberry	297	— Bird's Nest	298
		Wild Angelica	213	— Centaury	308
Wahlenbergia	294	— Basil	381	— Clover	124
Wake-at-Noon	501	— Bullace	138	— Horned Pop-	
Wake Robin	526	— English Clary	376	py	24
Wall Barley	616	— Celery	198		

	<i>Page</i>		<i>Page</i>		<i>Page</i>
Yellow Ox Eye	. 259	Yellow Vetchling	. 132	Yew	. 472
—— Rocket	. 31	Yellow-weed	. 48		
—— Pimpernel	. 407	Yellow-wort	. 308	Zigzag Trefoil	. 118

INDEX

OF

HEADS OF SUBJECTS TREATED OF IN THE PREFACE AND INTRODUCTION.

	<i>Page</i>		<i>Page</i>
Agricultural Zone, plants of, abound	xx	Inland vegetation of the Island	xxii
Alien plants, instances of	xix	Insular character of the Island, degree of	xxi
Remarks on	x, xi	Kalendar of flowering and fruiting	xviii
Authorities quoted	xv	Light, effects of	xxxiv
British plants not necessarily native wherever found in Britain	x	Marine plants	xxvii—xxxii
Chalk plants of relative frequency	xxvi	Maritime plants	xxi
Cliffs, Botany of	xxviii	Measure used in description	xvi
Climate of the Island	xx, xxvi	Naturalized plants	x
Descriptions of plants, how drawn up	xv	Ornamental plants excluded	xiii
Division of the Island	x, xxx	Occupancy, small power of, in certain species	xxiv
Doubtful natives	x, xiii	Plates referred to	xv
Exclusion of universally cultivated plants	xii, xiv	Quoted authorities	xv
Exotics growing freely in the Island	xix	Rivers and streams	xxiv, xxxi
Extinct stations of plants	xvii	Species list of Isle-of-Wight plants absent from the Channel Islands	xxii
Flowering time of species	xviii	Predominant in E. and W. of England, respectively ix, xxxiii	
Fruiting time of species	xviii	Species list of plants wanting in the Island:—	
Geology of the Island	xxx	Aquatics	xxv, xxxii
Heat of summer and winter	xxvi	Chalk plants	xxvi
Indigenous vegetation, its character	xx		

	<i>Page</i>		<i>Page</i>
Indifferent as to locality, and growing on the main- land of Hampshire .	xxii	Wight, Isle of, geological features, situation, soil, &c.	ix, xix, xxxii
Streams and rivers .	xxv, xxxi	Year, seasons of	xxvi
Temperature of seasons .	xxvi	Zealand, New, Botany of, compared with that of the Isle of Wight	xxiii
Utilitarian plants excluded .	xiii		
Vectian and Mainland Floras compared	xxii		







